

BIRD STUDIES

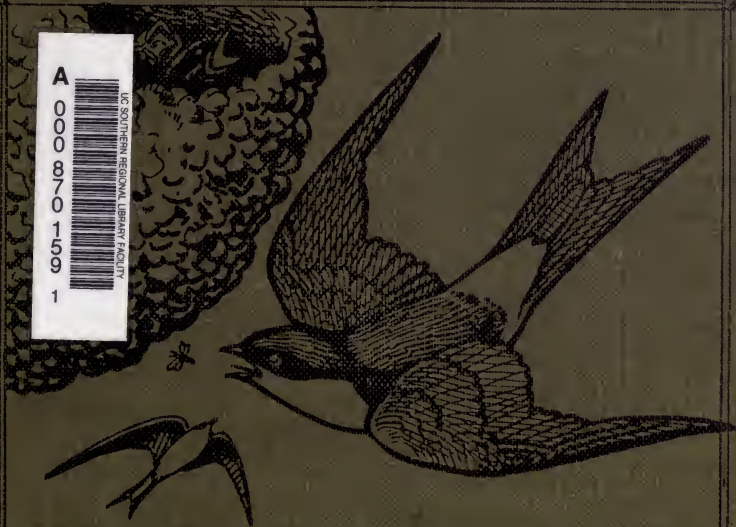
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The Cambridge Nature Study Series

General Editor: HUGH RICHARDSON, M.A.

BIRD STUDIES

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PREFACE

A VERY real desire for a school-book on Birds has resulted in this volume. Books on British Birds are legion, for these bright creatures make so strong an appeal that the Nature-loving public have been well catered for by the publishers who have produced books ranging in price from pence to guineas. Few of these are specially designed to help pupil or teacher by taking a definite place in the school curriculum.

Birds are best studied as living creatures *in their own homes* ; otherwise it is difficult to obtain any real idea of the lives they lead.

Over and over again I have found that teachers have a keen desire to know how this practical study of birds can be organised both in and out of school hours, and the present volume has been written to meet this want.

The twenty-four lessons which follow are arranged in the order of the Seasons. They have already been tested in my own classes both with teachers and scholars,

and it is as a result of combined experiences from field and class-room that it has been possible to put together these pages.

The attempt to use living wild birds as material for a course of school lessons which have to be fitted into the school time-table is at least new and daring, some critics may say impossible and absurd. Difficulties, I admit, exist; that is just why I welcome helpful suggestions and hearty co-operation from any others who have tried the experiment. This book is also intended to be helpful to any boys or girls who have no Nature lessons in school hours, but who pursue these hobbies for themselves in their holidays. It may, too, prove of some assistance to those interested in bird study but not connected with school work, more especially from the point of view of *bird ecology*, and will perhaps suggest to them some new line of thought which, so far, has not been made manifest.

The line drawings have been specially prepared for this book by Mr C. F. Newall of Wallasey, Cheshire. I am indebted to Mr Oxley Grabham, Curator of the York Museum, for some assistance in reading proofs.

W. P. W.

April 1914.

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For the use of photographs I am indebted to: W. J. Clarke, S. Crook, C. A. Hall, B. Hanley, R. B. Imisson, J. E. H. Kelso, C. F. A. Porbal, S. H. Smith, F. C. Snell and G. W. Webster. The line drawings are by C. F. Newall.

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PART I

BIRD STUDIES IN SPRING

(MARCH TO MAY)

LESSON 1

ALONG THE HEDGEROW

Materials required. *Several stretches of roadside hedges. For each boy, notebook and pencil. Satchels, boxes and small tins are likely to be useful, also a few walking sticks if kept under proper control. A small looking glass attached to a stick may be useful for examining nests for eggs. Those who have cameras may bring them. The more field-glasses the better, one at least in the master's hands. For makers' names and addresses see Appendix.*

Also take with you one or more outline copies on tracing paper of a picture of the House Sparrow which has previously been prepared.

Read the questions carefully through before you start. Take full notes in pencil out of doors. Write out neat answers in ink after you return.

Hedgerow birds, as a rule, are of small size. True, the Partridge is very fond of placing its flat nest under cover of a hedge-bottom, as also its larger relative, the

Pheasant, but, with these exceptions, the birds of our first haunt will be found to be about the size of the common Sparrow.

Make an outline sketch, life-size, of a Sparrow, so as to have before you an idea of the relative sizes of the birds you are likely to see in and around a hedgerow. As a guide, it may be stated that the **House Sparrow** (*Passer domesticus*) is six inches in length, that is, from the tip of the short beak to the tip of the tail. In giving the size of a bird, this is the usual method of measurement that is adopted.

Before the trees, shrubs, and bushes which grow in a hedgerow are fully leafed, several kinds of familiar birds may be seen there to advantage, more especially those which, later in the year, hide their bodies within the cover afforded. A dead bird may sometimes be picked up, as in the case of the Wheatear in Fig. 1, and it is always interesting to ascertain, if possible, how the bird met its death.

In any case, there are three kinds of birds which do not mind being watched, and which are to be found in spring along almost every hedgerow. Let us find out during the first Lesson what these birds are, and in what way we may get to know them. In addition let us ascertain something of their habits and general life-history.

All three of these different species to which you are to give your attention *utter a song*, so that in addition to being able to identify them *by sight*, you ought also to learn to recognise them *when they sing*.

The first of the three birds which one is likely to see along a hedgerow is to be observed perched on the topmost branch of a hawthorn, bramble, or other bush.

In colour it is a mixture of yellow, green, and rich brown. It rather reminds one, on first sight, of a Canary. It has a somewhat flat head; there are some streaks on the breast, and these are well seen when field-glasses are used. Notice whether the bird seems at all excited whilst it is perched upon the twig, and



Fig. 1. Wheatear killed by flying against telegraph wires
To illustrate how birds meet their death in this way

whether it makes any attempt to fly hastily away as you approach. Make a note of what happens.

Is it, whilst perched, uttering any song?

If so, listen most carefully, and endeavour to fasten its notes upon your memory. If you can manage to

liken its notes to a particular word, or sentence, you will do well, for this is a capital way of learning the notes of a bird.

The specimen in view is certainly singing. The simple little strain is repeated over and over again without variation, and is bound to arrest attention. It does not strike the ear as very musical, yet there is a rustic simplicity about it which makes a strong appeal to all those who love the country. What is your opinion of it?

The song starts in a minor key, then suddenly ascends, tones off, and finally concludes in a long drawn-out shivering note.

Does not the simple strain sound something like this :—

“A little bit of bread, and no c-h-e-e-s-e”?

If it answers to this popular description, and you have accurately described its colouring and general appearance, then the bird you have seen can only be the **Yellow Bunting** or **Yellow Hammer**.

Why does it frequent a hedgerow? Where does it build its nest? Is it high up or low down in the hedge? Of what materials is the nest built? From whence are they collected? Do both the male and female birds help in building the home? How many eggs are laid, and what is their chief feature? Is not a local name for this bird Scribbling Lark? What connection is there between the forepart of this name and the curious markings upon the eggs? Has it any other local names? If so, write them down, and, where possible, state why such names have been given and to what locality they apply.

Is the Yellow Bunting always a solitary bird? Does it travel about in flocks during the winter, visiting stack-yards? (See Lesson 21.)

Of what does its food consist? Does the food vary in spring and summer from that partaken of in autumn and winter? If so, why is this? If you have been able to ascertain any particular kind of insect upon which the Yellow Bunting feeds during spring and summer, make a sketch of such insect, and state whether a larva (caterpillar), pupa (chrysalis), or imago (perfect insect) was taken. Also ascertain, if possible, where the food was obtained.

Whilst you were watching the Yellow Bunting—and bird-watching results in a fund of useful and interesting information being gathered that could not otherwise be obtained—did you observe a plain-coloured, plump little bird flitting in and out of the same bush? It has flesh-coloured legs, and is dressed in a neat suit of steel-grey and brown.

If you watch it closely, you will see that every now and again it shuffles its wings, dropping them so that they hang below the body. This is why it is sometimes called Shuffle Wing. Make a hurried sketch of the bird in the act, so as to rivet it upon your mind. Does it sit perfectly still like the Yellow Bunting? You have already noticed that it is not nearly so gaudily attired. Is it not rather restless, compared with the species we first saw?

Does it utter any song? If so, are the notes loud or somewhat subdued? If the latter, are they sweet and plaintive? Do the notes vary to any extent? Does the bird remain still *whilst it is singing*, or is it almost continually on the move? If the latter is the case, mention the name of any other bird you are acquainted with which is equally restless. (The Greater White-throat is one.)

The bird before you then is the **Hedge Accentor**. It is commonly called the Hedge Sparrow, but *it is an*



Fig. 2. Head of Hard-Billed bird (Greenfinch)

Accentor, for it sings in accents, and, unlike the Sparrow, it is not a Finch. Finches are hard-billed birds and live for the greater part upon the seeds of wild plants. The Hedge Accentor is a soft-billed bird, and lives almost entirely upon insects.



Fig. 3. Head of Soft-Billed bird (Hedge Accentor)

Similar questions may be asked and answered concerning this bird as in the case of the Yellow Bunting, but you will find that they differ very much in many

respects. For example, the Hedge Accentor never travels about in flocks. Although it has a long song period and always seems happy, it is nevertheless a somewhat solitary species. Why does not the Hedge Accentor become gregarious in autumn and winter, like the Starling, for instance? Can it be that, following the example of the Bullfinch, *it pairs for life*? Mention any other British birds you know of which pair for life. Do you not consider this a most remarkable thing? Do other animals pair for life, or do the majority have to find a fresh mate every year? Give instances of life-pairers, if you know of any, and, if you are unacquainted with them, make a mental note of the fact that by studying wild creatures *out of doors whenever you can, and at all times of the year*, you will be able to discover for yourselves a good deal of interesting and original information on this subject. We really know very little about it, and more observers will be welcome.

Our third bird need not detain us long, at any rate as regards finding out its name. It has a rich red breast and throat; dark lustrous eyes; a warm brown back; a plump, well-groomed body, and long legs.

When upon the ground it bobs up and down like a living Jack-in-the-Box, and takes bold, long hops. It sings a sweet, plaintive song, as well as uttering a curious note which sounds like a fishing winch being wound round, and it is much beloved because of its friendliness and its love of human beings.

It nests in very curious places, such as old tin cans, pots, buildings, and even houses, but it dearly loves a grassy bank along a hedgerow. Our bird is, of course, the homely **Robin**. Is this a solitary bird? Is it a

quarrelsome species? Have you ever seen it fighting? If so, with whom, and why? Does it leave the garden in spring after spending all the winter there? If so, for what purpose? Whither does it go, and when does it return?

Describe the difference (if any) between the male and female Robins. Are they so very unlike as most people seem to imagine? Have the poets rather led us astray concerning the sexes of this bird? Give an example.

Have you ever noticed the young birds? Is the Robin a useful bird? What is the nature of its food?

Does it sing in winter as well as spring? When does it begin its song again after summer is over? Are there any legends and superstitions concerning this familiar bird? Give instances. Why has it become such an established favourite among us?

PROBLEMS

1. Make out a list of all birds which you see and recognise.
2. Write down particulars of any birds seen in the hedgerow which you cannot identify. State the date, time of day, bush frequented, and what the bird was doing, e.g. feeding, singing, perching, or moving about; also its size, and general appearance.
3. State the chief materials used in any nests, old or new, that you see. What birds do you think built these nests, and how do you know this?
4. Did any of the nests contain eggs? If so, how many, and of what colour?
5. In what bushes were the nests built—wild rose, bramble, hawthorn, blackthorn, gorse, or holly? Can you suggest any reason for the choice of nesting place?

6. Did you see any birds in pairs which you thought were going to build nests in the hedge before very long? If so, where do you think they will build?

7. Which kind of bird did you get nearest to, and how close did you get to it?

8. What birds did you hear singing? Write down anything you can that will represent their songs, either in words or in syllables, or in musical staff notation, or in tonic sol-fa.

9. If you are able to return to school by some route other than that taken by the rest of your schoolfellows, and perhaps with only one companion, you should be able to go very quietly indeed and get much closer to the birds. Do not let them hear you talking before you see them. Whisper and signal by a lifted finger. (See Appendix.) When you meet birds in pairs try to see whether they are exactly alike, or whether there is any visible difference between them which might mean male and female. In particular say whether you can distinguish male and female in Blackbird, Robin, Chaffinch.

10. Write out the names of any of the following which you did *not* see to-day:—Greenfinch, Greater Whitethroat, Great Tit, Chaffinch, Willow-Wren, Blackbird, Song Thrush, Redwing, House Sparrow. Could you have recognised them if you had seen them?

11. Draw from memory the heads of any birds of which you have had one good view, and show whether their beaks are like that of the Greenfinch or the Hedge Accentor.

12. If you can get a really good view of any bird near at hand, try to mark on your tracing-paper sketch how it differs from the House Sparrow (*a*) in size, (*b*) in shape, (*c*) in colour. Take full notes on the margin of the paper as to colour, thus:—bill blue, forehead black, neck grey, back chestnut, throat red, and so on. The notes should be sufficient to allow you to make a finished coloured picture of the bird afterwards.

LESSON 2

ROUND THE POND

Materials required. *As set out in Lesson 1 "Along the Hedgerow," excepting that, instead of road-side hedges, a pond well tenanted by animals and plants (and not a horse-pond mostly full of water fleas) should be chosen.*

A pond or group of ponds would do. A square mile of heather dotted over with shallow swampy ponds would also serve the purpose, or a group of long disused brickponds, or a lake a mile or two in circumference. A reservoir would not be quite so good. But, failing a natural lake, use an artificial lake in a park where ornamental waterfowl will be particularly easy to draw. Or if none of these are at hand try to answer the questions at end of the Lesson along a riverside or seashore.

If much wading has to be done you may like to bring five-shoes or sand-shoes to wear in the water and a change of knickers in case you get in too deep. Consult your teacher as to whether swimming will be necessary or whether you can get a boat.

If the ponds are in any way preserved an introduction to the owner or shooting tenant, and a preliminary call on the gamekeeper, will pave the way for a pleasant visit. If possible induce the keeper to come with the party under the pretext that he can then satisfy himself that you do no harm. Let him talk and ask him questions. Take care to have a silver coin waiting in a convenient pocket.

A net might be added for catching any winged or other creatures so as to ascertain the food of any birds which frequent the pond.

The pond as a community is a wonderful study. To-day we have to devote attention to its bird life, and several problems (see end of Lesson) will present themselves for consideration.

Two typical pond birds which we *must* make a point of seeing are the **Moorhen** and **Coot**. The former may frequently be met some distance from a pond, but the Coot is more of a stay-at-home and rarely leaves its native retreat. The Moorhen, on the other hand, is somewhat of a vagrant.

Both species are of shy disposition, and, as in all serious bird work, the observer must exercise quietness, patience, and discretion. As one approaches the pond, probably the first sign one will have of the presence of these birds will be the sound of an alarm-note. The cultivation of the ear in field ornithology is as important as that of the eye. Here is a case in point.

The alarm-notes of both these birds are short and sharp. Therefore, no time must be lost in hearing the notes, and, if possible, setting them down on paper until one is able to recognise them without difficulty.

Of the two birds the Moorhen possesses the harsher call, and it may be written down as a guttural "crr-o-ok," whilst that of the Coot is clearer and more frequently repeated. Three renderings of the Coot's call, or cry, are as follows: "k-ō," "crew," or "kew." Can you improve on these?

If, so far, it has not been possible to identify the

bird *by sound*, careful stalking on the part of all concerned should soon result in a sight being obtained of the object of the quest. Take a quick glance at *the forehead* of the bird, or birds, in view; if there is a *red patch* behind the bill, it is a *Moorhen*, if a *white patch*, it is a *Coot*.



Fig. 4. Nest and Eggs of Moorhen

To *illustrate* how the Moorhen frequently places its nest well out of reach of floods and high tides

The Coot is the larger of the two species. Consequently (though this rule does not always apply among birds in general) it lays a larger egg than its cousin.

Both species build more or less shallow nests (see Figs. 4 and 5), composed of aquatic plants, but there is



Fig. 5. Nest and Eggs of Coot

To illustrate how the Coot often places its nest well above high-water mark to guard against floods and high tides

always a good foundation to the structure, so that in the case of a rise in the surrounding water, due to excessive rainfall, floods, or other causes, the rush cradle may be free from harm.

Very often, as Fig. 4 shows, the Moorhen places its nest fairly high up. The one illustrated was built well above the level of the water, being placed upon the arm of a sturdy bush which was enveloped by the bramble, thus affording shelter and seclusion.

The Coot's nest (Fig. 5), on the other hand, was placed securely among rushes and other aquatic plants, nicely secluded from view and entirely hidden from the land side of the pond.

The Moorhen, however, does often construct a *floating nest*, actually *on* the water, and in flood time the nest and its anxious owner have been seen floating down stream until an anchorage was secured!

One of the most remarkable episodes connected with the life-story of these aquatic birds is the provision which has been made for the young to be able to take care of themselves *as soon as they are born*.

On one occasion we were photographing a Moorhen's nest containing seven eggs. As the nest was floating on a pond some distance from the shore, it took a little time to make arrangements for exposing a plate. At last all was ready, but, before one had time to realise what had happened, four of the eggs had hatched before our eyes and the fluffy little occupants (see Fig. 6) dived without the slightest hesitation into the water and enjoyed their first swim. The result was that a picture was obtained of the nest and three eggs only.

The parent birds are very proud of their young, and it is a delightful sight to watch a family party *when*

they do not realise that their home life is exposed. In fact, the only way to see birds to advantage is to see without being seen.



Fig. 6. Young Moorhen

PROBLEMS

1. Can you approach the pond very quietly and keep hidden by walls, trees, or bushes until you get close to the water?
2. Is the pond surrounded by any rushes, bulrushes or reeds? Make a drawing of any such water plants.
3. Are there any islands in the pond? If so, are they reedy, rocky or wooded?

4. Do any birds rise from the pond before you reach it? Exactly how much of them can you see as they fly? Are they black or white? Can you see their necks or legs? Are their wings short or long? Do the wings move fast or flap slowly?

5. Draw any of the swimming birds, and especially those in any curious attitudes, e.g. asleep, preening their feathers, or feeding.

6. Can you make a sketch, or map, of the pond *as a whole*, showing whether it lies among trees or mountains, whether there are islands, whether its shores are bare or reedy?

7. Make out a list of the different birds actually observed.

8. Write down particulars of any birds you could not identify, stating not only their colour, size, shape, and markings, but exactly *where* they were, and *what* they were doing.

9. If feeding, were they diving or swimming?

10. Particularly note whether they obtained their food on or below the surface of the pond. This is important, as it is in itself sufficient to identify certain water birds.

11. If any birds dived when you approached, mention their names, and their reason for so doing. Did they disappear silently or cause any commotion?

12. Did any birds utter an alarm-note? Describe what it was like, and whether it was occasional, or continuous. Was it harsh or pleasant? Write the note in phonetic spelling.

13. Watch any birds which come to the pond to drink. If the Ring Dove or Wood Pigeon is one of these, note carefully and describe in what way it differs, *when drinking*, from all the other visitors.

14. If any nests are found, describe of what they are built, and from whence the materials were, in all probability, obtained. Are water birds' nests, as a rule, deep or shallow? State the reason.

15. What other aquatic plants surround the pond, and in what ways do these serve the birds which frequent them?

16. Is the pond solely tenanted by *water birds*? Mention those which are web-footed and otherwise.

17. If there are any bushes near the water, what purpose do these serve with regard to some of the smaller birds which delight in frequenting the neighbourhood of water? Do such small birds show themselves willingly, or are they of skulking disposition?

18. Is there a bird among the rushes which, when a stone is pitched among them, sings with increased power as if it were angry that it had been disturbed?

LESSON 3

PAIRING

The pairing of birds, and the many curious habits connected with it, are of more than ordinary interest. In the early days of spring there is ample evidence of this.

Birds secure mates in various ways. A few of our British birds pair for life, e.g. the Raven, Crow, Bullfinch, and probably several others of which we have yet to learn more. We can at once mark off, as it were, those species that are *likely* to be mated for life, because they must not be gregarious. Birds which travel about in mixed flocks containing both males and females could not *apparently* arrange their domestic affairs in such a way that re-pairing during the late winter, early spring, or summer is unnecessary.

Thus Starlings, Mistle Thrushes, Goldfinches, and Snipe, which are gregarious at some period of the year, and Chaffinches, which for some weeks, at any rate, move about in separate parties composed of all males, or all females, could not, *as far as we know*, so arrange their matrimonial affairs as to become mated for life. Yet

it is believed that Rooks, which are quite social birds, and travel about in company more or less all the year through, *pair for life*, and in the early spring defend their nests with much courage against invaders.

The fact is we know very little of these *life-pairers*, as we may call them, and there is much original work to be done *in the field* before we arrive at a correct understanding regarding them.

When we come to our summer migrants (as will be shown in the next Lesson) the difficulty of accurate delineation becomes more apparent, for in their case long separation during over-sea migration *seems* inevitable.

Pairing then is chiefly brought about among birds by :—(a) song ; (b) fine plumage and engaging habits ; (c) conquest. In some cases the possession of musical ability and gay plumage are combined, such as in the Wheatear, Goldfinch, and Yellow Wagtail.

The **Wheatear** reaches our shores from Western and Northern Africa, from Northern India, and other adjacent countries, in March. It is mostly a solitary species, a lover of moors, downs, and the everlasting hills. Very often it is only a passing visitor, just resting and feeding before moving further on.

The male in his trim uniform of bluish-grey, relieved by black, with a very prominent patch of white on the rump, is a most handsome bird, and, when courting, he hovers in the air with tail spread out like a fan, and sings a pleasant little song as an additional attraction (Fig. 7). The female bird crouches upon a grassy hill-side watching and listening. Thus is she wooed and won.

The Yellow Wagtail, another summer migrant, is similarly demonstrative, whilst the Nightingale relies

solely on his minstrelsy, the Tree Pipit on his fascinating song-flights, and the Corncrake, or Landrail, depends *apparently* on his rusty call note to find a mate.

The whole subject bristles with problems of the greatest interest, and much more might be written and suggested, did space permit. Various problems are,



Fig. 7. Wheatear hovering during courtship

however, set out hereafter to which careful attention should be paid.

In the case of the **Mute Swan**, the male (cob) and female (pen) remain together for life *in a semi-domestic state*, and are very much attached to each other as our

photograph shows (Fig. 8). So much so that I have known the male to pine away and die of a "broken heart" when his consort was snatched from him by a prowling fox.

In Fig. 8 the bird on the right is the female, as seen sitting upon her nest. The male, on the left, showed



Fig. 8. A pair of Mute Swans (female sitting on nest on right, male on guard on left)

To illustrate similarity of pose of both birds and the affection the male has for his consort

great interest in the photographer's operations, and took up the position shown, adopting a threatening attitude and watchful expression. He is most solicitous for the welfare of his wife and family, a model father, and a resourceful husband. The male is a trifle larger than his mate. Otherwise the sexes are almost identical.

There are great discussions now taking place about the right relations between men and women in an ideal human society. Some day you will consider whether you will allow yourself to give worship and adoration to husband or wife. Some birds and beasts are driven by blinder instincts. All that they do need not be an example for your own immediate conduct. But you had better know the facts of Nature as exactly as possible. You will then be better able to approach some of the great problems of life. You must remember also that the discovery of right answers to some of these problems will affect not only yourself, but suffering humanity for all future generations.

PROBLEMS

1. Arrange the birds you see to-day in three columns according to whether you saw them :—

In flocks	In pairs	Singly

2. In cases where birds were in pairs, say whether the two partners were coloured alike or whether there was any noticeable difference.

3. How were the partners behaving in each case? Were they sitting side by side, fighting, playing together, chasing each other, or working together at nest building?

4. Did you notice birds singing in pairs, or any which seemed to be listening to each other, or listening only?

5. Have you noticed anything in connection with birds which would lead you to the conclusion that they possess means whereby courtship rivalry is carried on? Are birds ever jealous of each other? Or are they rivals? If so, state precisely what you have observed.

6. At what time of year have you observed these courtship habits, and why?

7. If by means of song-flights, or the showing off of plumage, give an example of a well-known bird in each case, and describe as well as you can exactly what happens. Sketch the curious attitudes of any birds which you observe during the pairing and nesting season, and indicate whether male and female both resort to the same, or whether the overtures are made by one sex only. Do the male birds try to attract the females or vice versa? Does either sex try to escape from the other?

8. Mention six familiar birds which pursue their courtship by means of their songs, and any others with which you are acquainted, which, having no song, resort to some other method of attraction.

9. Have you noticed any birds which *fight* for partners, like the so-called chivalrous knights of old? If so, give examples, and, if possible, sketches of them engaged in combat.

10. Are you acquainted with any birds in which species the male and female are almost always seen together *all through the year*? What does this indicate?

11. State, if you can, one of the *earliest* birds to get ready for courting, and one of the *latest* of them all. How do you know when a commencement is made?

12. How does the common House Sparrow secure a female partner? Does *conquest* play an important part with regard to this much abused bird? How do you know this?

13. Why do most birds *cease* singing when nesting operations are in full swing?

14. Mention any *song birds* which give voice during *the summer*, and keep an accurate record of the *first* and *last* dates *when birds are heard to sing*, as this will be of considerable aid when making comparisons.

15. Are there any British song birds which may be heard to sing *at any time during the year*, and which have *no restricted song period*? Give at least two familiar examples.

16. Supply the missing words to the following lines :

- (a) "In the spring a fuller crimson comes upon the breast;
In the spring the wanton gets himself another crest;
In the spring a livelier iris changes on the burnished
In the spring"

From TENNYSON'S Locksley Hall.

- (b) "Early in the spring time, on raw and windy mornings,
Beneath the freezing house-eaves I heard

.
Late in the autumn, on still and cloudless evenings,
Among the golden reed-beds I heard

."

CHARLES KINGSLEY.

- (c) "Bird of the wilderness
Blithsome and cumberless

.
O to abide in the desert with thee."

HOGG.

17. Learn this verse by heart :—

"Summer is coming, summer is coming.
I know it, I know it, I know it.
Light again, leaf again, life again, love again,"
Yes, my wild little Poet.

Then go out of doors, find and identify the bird which sings the music to which Tennyson set these words.

LESSON 4

SUMMER MIGRANTS

There are about forty different species of birds which come to Britain during the spring and summer (see Appendix), but several of these, e.g. Spotted Crake, Stone Curlew, Hobby Falcon, Kentish Plover, and Quail, are comparatively rare birds, and unlikely to come under ordinary observation.

To do any successful work in recording systematic and detailed observations, it is best to restrict attention to a few familiar species which regularly visit a chosen district, where one can depend upon finding them from, say, April to September.

The question naturally arises, *why* do certain birds which spend the winter out of Britain, return each succeeding spring to charm us with their songs, engaging habits, and sprightly ways?

Primarily, it is a matter of suitable nesting-sites, and of a good supply of food. There is such a thing, too, as old associations, for there can be no doubt whatever that birds become fond of certain spots, and make a point of returning year after year to the same locality.

As a rule, the migration movements of birds are carried out at night, under the cover of darkness; thus we are to a considerable extent baffled in conducting our operations. Mr Eagle Clarke, the British Ornithologists' Union (see Bibliography), and many patient individual investigators have carried, and are still carrying out, a splendid work in recording the

movements of summer visitors and other birds, but there is no reason why all those genuinely interested should not lend a helping hand in this direction, for bird watchers and recorders are required everywhere.



Fig. 9. Tree Pipit descending from song-flight

Let us take the case of the **Tree Pipit**, or Titlark as it is more commonly known in country districts. The

Meadow Pipit is also called by this name in many localities.

I have found, after over thirty years careful bird-watching, that this favourite summer visitor returns about mid-April (often on or about the same date) to the same spot year by year. It passes the winter in Africa, Persia, or India, yet somehow manages to find its way not only to England, not only to Hertfordshire, not only to Letchworth, but to the self-same tree in which it made its watch-tower the year before.

As soon as it arrives, the wonderful song-flights are commenced, the bird flinging itself, as it were, into the air, ascending several feet upwards, and then finally descending on motionless wings (Fig. 9).

Having arrived at its favourite watch-tower (a tree or tall bush) the Tree Pipit may be looked for there almost at any time up to the month of August, or even later. The female is more difficult to observe as, in spite of the male's fondness for an exalted position, the mere apology for a nest is built upon the ground, and she assiduously attends to home affairs. The structure is more substantial than that of the Pipit's near relative, the Skylark, and is usually hidden under a tussock of grass. The female sits very close, and often refuses to be flushed until almost trodden upon.

I find as regards the eggs that several distinct varieties are laid by this favourite summer migrant, red, chocolate, and brown being characteristic ones, but the young ornithologist would do well to make careful notes of all the eggs that are discovered, and compare the results obtained year after year.

Some migrants (see Wheatear, Lesson 3) will only

appear when halting on their journey, and merely stray peeps will be obtained of them. Sometimes a bunch of migrants will be seen to fly over hastily in their eager rush to some chosen place farther on. But, at a time when bird-watching is at its height, when our own indigenous birds are agog with excitement, and foreign immigrants are arriving almost daily, one has to be on the *qui vive* both when it is light and also when it is dark.

PROBLEMS

1. Keep a list of summer migrants thus :—

SUMMER MIGRANT TABLE

kept by _____ *at* _____ *School*

Period _____ *to* _____

Name of Bird	Date of first appearance last year	Date of first appearance this year	Date of last appearance this year	Remarks
Wheatear	March 25	March 20	September 30	Seen on migration. Does not stay to nest Haunts trees and bushes. Nests on the ground
Chiff Chaff	March 30	March 31	October 1st	

2. Name six well-known summer migrants you know by sight, or song, and say where you would be most likely to see or hear them.

3. Mention those summer migrants that can best be identified by (a) their song or note, (b) by seeing them, (c) equally well by sight or sound.

4. What does the food of most of our summer migrants consist of, and in what way may this be ascertained?

5. How do you distinguish the House Martin from the Swallow when seen either flying, perched, or upon the ground? Draw a sketch of the tail and hind quarters of both birds as they are seen flying overhead, and note particularly on your sketch any feature which is of prominence, especially in the House Martin. Learn also to know the Sand Martin on the wing. How does it differ from the House Martin?

6. There is another Swallow-like migrant which often joins its fellows towards evening. Describe their movements at such a time, and note any noise which they make when flying through the air. Are these birds ever seen upon the ground?

7. Note the Chiff Chaff when you see or hear it. You should look for it in tall trees and bushes. Is there any other bird with which it may be confused? How do you distinguish one from the other? Do you know of any local names for either bird?

8. Have you noticed whether any summer migrants haunt ponds and streams? Mention any species you have observed and any features of interest.

9. Mention four famous song birds which are summer migrants to Great Britain and Ireland.

10. What are the colours which chiefly predominate among our thirty to forty species of summer migrants, and are these soft and refined, or loud and gaudy? In those birds that are soberly dressed, what may we expect to discover so far as concerns their vocal powers?

11. In what way would you suggest proof being obtained of a summer bird of passage returning to the same haunt year after year? Do you think it possible, or probable, that any species does this? If so, state your reason for coming to such a conclusion.

12. Watch a Cuckoo when in flight and draw a sketch of its general appearance upon the wing. What kind of flight would you call that of the Cuckoo?

13. How can you discover whether this familiar summer migrant haunts the same locality during its stay among us, or wanders aimlessly about as a feathered vagrant?

14. In what way does the Cuckoo remind you of a certain Bird of Prey? Compare the two birds in their general appearance, and habits, and note their differences.

15. Do you ever see any small birds in the company of a Cuckoo? If so, what are they doing, and to what do you attribute the same?

LESSON 5

A BIRD CENSUS

Materials required. *An Ordnance Survey Map of the School district, scale 6 inches to 1 mile. Blank Postcards. Pins. The class will work in pairs on allotted routes, each route different, and report on returning to school.*

Two old pupils of the Editor of this Series have done really excellent work in regard to the observation of birds, and more particularly in regard to mapping out birds into their nesting areas. They are the brothers C. J. and H. G. Alexander, old scholars of Bootham School, York.

Fired by their enthusiasm and original research, a line of inquiry is suggested which boys might well follow up, and it is largely as a result of the work of the brothers Alexander (see note at end of Problems) that this Lesson has been introduced.

A map showing some of the migrants in part of Tunbridge Wells was prepared by the two old Bootham boys, and published in *British Birds* (see Appendix). This completed map is the result of using sections of Ordnance Survey Maps, and the census obtained, and



Map showing some of the migrants in part of the Borough of Tunbridge Wells. (Six inches equals one mile)

Based upon the Ordnance Survey Map with the sanction of The Controller of H.M. Stationery Office, and reproduced by permission from *British Birds* magazine.

clearly indicated, is of immense local, and even national, interest.

This map deals with nesting birds only, each species being given, as shown, an initial letter such as *N.*—Nightingale.

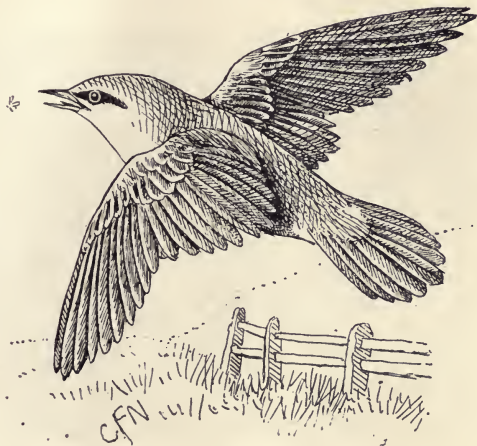


Fig. 10. Chiff Chaff catching insect while on the wing

These initial letters, as the Map shows, are put in squares in the identical spot where a pair, or more, of each species was located, and the result is that one has a bird's-eye-view, as it were, of the avi-fauna of a certain district at a certain period of the year.

In placing a pair of birds on the map, the observers relied, as a rule, on the singing of the male, though

the female was also seen in many instances, and the nest found.

Thus, though both sexes may not be seen, the continuous presence day after day of a **Chiff Chaff** in a certain spot obtaining food (Fig. 10) or, better still, the finding of its nest (Fig. 11) are quite sufficient to



Fig. 11. Nest and eggs of Chiff Chaff

To *illustrate* an arched-in nest which is uncommon among British Birds, and evidence of the right of this species to be included in a Bird Census of Summer Migrants

warrant a square upon our own map with the letter *n* added to indicate that the nest was also discovered.

Migratory birds *which are only visitors for a short period* should not be recorded on this particular map, such as Wheatears, Whinchats, and others making their way further north, but careful and persistent field work

will result in useful information being gathered together which should enable the recorder to prepare a whole *series* of maps illustrative of the bird life of a given district, and at different seasons of the year.

Summer migrants should, as already indicated, receive special attention as accuracy is perhaps more certain in their case, but our resident nesting species,



Fig. 12. Female Blackbird on nest

To *illustrate* the dark places in which the Blackbird often nests and how well the bird is protected in consequence, also the right of inclusion of this species in a Resident Bird Census

such as the **Blackbird** (Fig. 12) and **Lapwing** (Fig. 13), should not be omitted in another map specially allotted to them. When a series of census maps have been obtained over a number of years, the comparisons that may be made will be of increased interest and usefulness, and if attention only be directed to a certain hedgerow, copse, wood, moor, or pond, so much the better. The series can be collected together, useful

comparative tables can be prepared, and the whole will give a capital idea of the bird life of one's own neighbourhood. If such a work as this were organised efficiently and carried out in every school, yearly records being sent to some central authority (such as the British Ornithologists' Union), we should all want to have a hand in it, as it would prove a fascinating recreation of the open air. One would realise, too, that the path of Ornithology is not nearly so well trodden as some would have us believe, and that one was helping forward the progress of Science, which, as Huxley described it, consists of "well organised common sense."

Maps showing (a) Summer Migrants; (b) Resident Nesting Birds; (c) Autumn Migrants; (d) Winter Migrants; (e) Occasional Bird Visitors, and so on, would facilitate easy reference, and the various sections might be placed under the care of *certain* pupils who would be held responsible for them.

I have noticed times without number that Snipe, Fieldfares, Redwings, Goldfinches, Tits, and other birds return regularly to the same haunts, and at about the same time, as also the favourite roosting-places of Finches, Starlings, Jackdaws, Blackbirds, and innumerable other birds. These all need recording, and the map census is an idea that should make a strong appeal to those who pursue the keen delights of field Ornithology.

Maps prepared in one district can be compared with those made elsewhere, and useful comparisons and deductions made, whilst the idea is so elastic and far-reaching that certain families of birds, such as Woodpeckers, Tits, Owls, Warblers, Gulls, Terns, Finches, and others might very well have special maps allocated to them.

Nothing gives greater pleasure to the bird-watcher than to note a bird in a certain spot on more than one occasion, and, though a note made at the time is worth a cartload of recollection, a map reveals *at a glance* the



Fig. 13. Eggs of Lapwing

To *illustrate* how the Lapwing lays its eggs on the bare ground without any pretence of making a nest, and its right of inclusion in a Bird Census

census of our feathered population, and is capable of immense possibilities *if one sets about it in the right way.*

PROBLEMS

1. Write out on a blank postcard a list of common British birds, including resident and migratory species. To each name put an initial, or symbol, to serve as shorthand for the name; thus, Nightingale = *N*.

2. Follow your route as quietly as possible, listening for singing birds. Prick a pinhole in the map to mark the place where each bird is singing. If you see the bird, and are certain as to what it is, put the symbol close beside the pinhole, thus $\cdot N$.

3. Keep a note also of whether the bird is seen (*s*), nest found (*n*), or eggs discovered (*e*). Mark this on the card. Put your own name, date, and locality visited on the card.

4. Repeat the same walk again a few weeks later, and note how the data vary.

5. Make out a neat summary showing how many pairs of each sort of bird appear to be living on the ground under observation.

6. In addition to taking a Bird Census when nesting operations are in progress, the same may also be carried out later in the year, e.g. autumn and winter. At such time you will regularly observe certain kinds of birds in certain places, such as Fieldfares and Redwings along a hawthorn hedge, in the fields, or in a mountain ash tree. Mark on another Bird Census Map those birds which are seen in the same place on more than one occasion, so as to obtain an idea of the bird population at a later season of the year.

7. Summarise the results of these last named observations, and particularise in as detailed a report as you can (*a*) name of species, (*b*) where seen or heard, (*c*) whether singly or in flocks, (*d*) what doing.

8. Let each map prepared be as complete as possible, so as to show *at a glance* the state of the Bird Census of the district, and, when any noticeable variation takes place, make notes about the same, and each time you return to school compare your observations with the Ordnance Map which should, as a result of your own industry, become a valuable guide, not only to your studies, but to others similarly engaged.

NOTE.—For further information as to the practical results to be obtained from taking a Census of Migrants, see C. J. and H. G. Alexander, "On a plan of mapping migratory birds in their nesting areas" in *British Birds*. Witherby & Co. March, 1909, page 322; also Vol. v, pp. 103—105.

LESSON 6

BIRDS' NESTS AND EGGS

Materials required. *Specimens of old birds' nests and a collection of eggs for indoor studies.*

The making of a bird's nest is a very wonderful industry, and I have so arranged the illustrations that Figs. 13 to 19, showing respectively the "nest" and eggs of Lapwing and some of the materials used by the Long Tailed Tit, show evolutionary pictures, as it were, of the construction of a bird's home.

The **Lapwing** makes very little, if any, attempt at building a nest. Sometimes a few straws or pieces of grass are placed between the eggs and ground to keep the eggs drier and warmer. It is really an unnecessary proceeding, for, as soon as the large pear-shaped eggs are hatched, the young are able to run about and take care of themselves. (Compare this with incident related of young Moorhens in Lesson 2.) Thus it comes about that no nest is constructed, the eggs being placed on the bare ground, often in a furrow of a ploughed field. The fact that no nest is built makes the eggs more difficult to find, and, as they are regularly collected for market in some districts, this protective device is important to the birds in question.

Many species of birds which place their eggs upon the ground make little attempt to construct a nest, and birds of this type produce, as a rule, a pear-shaped egg, the reason for this being that the shape enables the bird to so arrange her treasures that she can



Fig. 14. Eggs of Sparrow Hawk in old Jay's nest

To illustrate how, on occasions, the first-named takes possession of the nest of another species

cover them successfully, even though there is no nest in which they are deposited.

The **Sparrow Hawk**, whilst a good hunter, is lazy in other respects for, as Fig. 14 shows, it often takes possession of the disused nest of another species (in this instance a Jay), patching up the old home to suit

its own requirements perhaps. Is its beak suited for the carrying of sticks and similar materials?

The handsomely blotched eggs are well displayed in the accompanying illustration (Fig. 14), one of the finest clutches I have ever seen. This clutch is now in my



Fig. 15. Nest of Meadow Pipit, containing three Pipit's eggs, and one (at the back) of the Cuckoo

To illustrate parasitism and the marked similarity between the egg of the Cuckoo and the Pipit

own collection, for, sad to relate, the keeper wilfully shot both the parent birds.

The **Cuckoo**, as every boy knows, deposits its egg in the nest of another species. Various theories have been put forward in explanation of this parasitism, but the

Cuckoo still remains somewhat of a mystery. In the north of England and in Scotland the Meadow Pipit is, as a rule, entrusted with the Cuckoo's egg and Fig. 15 shows such a nest found near Scarborough. The marked *similarity* between the egg of the Cuckoo and that of



Fig. 16. Nest and Eggs of Turtle Dove

To illustrate a very shallow nest built of sticks and twigs,
and a small clutch of eggs (2)

the foster-parent is worthy of notice, though when, as so often happens in the south, the Hedge Accentor is placed in charge of the Cuckoo's production, there is a marked *difference* in size, colour, and markings.

It is interesting to notice that, although the Sparrow Hawk and Cuckoo are about the same size, their eggs differ enormously in this respect. Why is this?

Our illustration (Fig. 16) shows the shallow platform of sticks which serves for the nest of a summer



Fig. 17. Nest and Eggs of Linnet

To illustrate an environment (a furze bush) chosen for protective purposes

migrant, the **Turtle Dove**. It is usually placed in tall bushes in copse, or woodland, though sometimes a hedgerow is chosen. Only two milk-white eggs are laid, and these can frequently be seen from below.

Some birds adopt as a nesting-site a position which

makes their homestead more secure against invaders, furred, feathered, and otherwise. The **Linnet**, for example, dearly loves a furze common where it can place its nest in one of the well-armoured bushes (Fig. 17). The nest of this species of Finch is a model



Fig. 18. Nest and Eggs of Tufted Duck

To *illustrate* the Duck's habit of plucking "down" from her own breast wherewith to line the nest

of bird architecture. It is of neat construction, and the cup is fairly deep. Has the young observer noticed whether this bird shows any tendency to nest in small colonies, a feature of bird life which has been somewhat overlooked?

The nest and eggs are nicely shown in the photograph, the light blue ground colour being spotted with reddish-brown.

Another good example of nest protection is afforded in the case of the **Dipper**. This most interesting species is a water bird that sings and a song bird that dives.

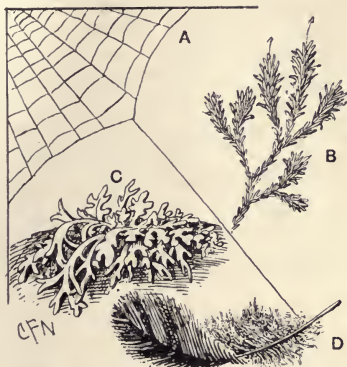


Fig. 19. Materials used by Long Tailed Tit in nest-building
A. Spider's web B. Moss C. Lichen D. Feather

It reminds one of a large Wren with a white bib. The arched-in nest contains, as a rule, five pure white eggs, remarkably pointed at one end. This bird resorts to secluded rivers and streams, the burns of Scotland being very favourite haunts. There it makes its home all through the year, the nesting period being from April to June.

The Duck tribe build comfortable cradles for the reception of their eggs, though the young are able to leave the nest and swim about at a very early age.

One remarkable feature is worthy of notice. The **Tufted Duck**, for example, uses various water plants for the outside foundation, lining the interior with soft down *plucked by the parent from its own body*. Fig. 18 will afford a good idea of the snug abode that is prepared by this species for the reception of the eight to ten, or more, greenish-buff eggs.

This is a diving duck, the tuft on the head and the black and white plumage being other features of interest. A curious local name for this bird is Old Hardweather (male).

Our last note respecting birds' nests may well be devoted to that of the **Long Tailed Tit**. This gipsy among birds constructs what is generally regarded as the most beautiful nest of any British species. It is globe- or bottle-shaped, and is made up of lichen, moss, wool, spider's webs, and a profuse lining of feathers (Fig. 19).

There is a small hole near the top of the nest by means of which the parents gain access to the interior. As many as six to twelve small eggs are laid (I have known a clutch of sixteen), and one often wonders how the parent contrives to preserve her long tail when sitting in the nest. Who knows?

PROBLEMS

1. Write out a complete list of birds that usually build their nests in (a) trees, (b) hedgerows, (c) near, or upon, the ground, (d) in holes, (e) on, or near, water.

2. Mention the names of four familiar birds which (a) build a deep nest, (b) a shallow nest, (c) a hidden nest, (d) an arched-in nest. Does any reason occur to you as to why this difference should exist?

3. Give three examples of birds which do not make much attempt, if any, at building a nest; say where they lay, and why no nest is constructed.

4. What bird, in addition to the Cuckoo, deposits its eggs in the nest of another species? Is it a regular, or irregular, occurrence?

5. What birds' nests are, as a general rule, chosen by the Cuckoo in which to deposit her egg? Give not less than six familiar examples which occur in your own district.

6. What do you consider to be the most wonderful nest built by a British bird? Give your reasons for coming to such a decision. Mention one or two others which are nearly as wonderful.

7. Have you been fortunate enough to see a bird engaged in building a nest? If so, describe in detail exactly what happens.

8. Do any British birds resort to the same nest year after year? Give examples.

9. What birds construct a covered-in nest? Draw a sketch of one, and indicate where the entrance hole is usually to be found.

10. Draw in outline a few examples of wild birds' eggs produced by a bird which:—

(a) lays its eggs upon the bare ground.

(b) " " " in holes, etc.

(c) " " " in a well-constructed nest.

11. In what way does the egg of a bird which lays upon the ground differ so markedly from that of a bird which places its eggs *in a nest*, and why is the egg of the former so fashioned, that is, what purpose does it serve?

12. Keep accurate records from the nests you find of the number of eggs in each nest, and state what is the usual number produced by the Yellow Bunting, Robin, Song Thrush, Hedge Accentor, and Moorhen.

13. Have you ever actually seen a wild or tame bird come out of its shell? Describe the difference in appearance and habit between a newly hatched Song Thrush and a young Moorhen. Why, if a marked difference exists, should this be so?

PART II

BIRD STUDIES IN SUMMER

(JUNE TO AUGUST)

LESSON 7

WATCHING THE PIGEONS

Materials required. *Split peas. A good supply of Pigeons. Farmyard Pigeons will do, or the half tame Pigeons which frequent public squares and parks. There are Pigeons at the British Museum, Guildhall, Law Courts, and St Paul's in London and in provincial cities. If not obtainable in any other way, try to hire some live Pigeons in cages from a poulterer or dealer (see Appendix) or get in touch with someone who keeps tame Pigeons.*

There is no better way of studying *the flight* of birds than by watching the tame **Pigeons** which frequent our public buildings, squares, parks, farms, schools, and other places. Many interesting notes and sketches may be made as a result.

It is astonishing to notice what a mixed assembly these tame and half tame Pigeons form, and any boy who has kept these birds as pets should be able to assist his schoolfellows in forming an opinion of the varieties represented.

Both when upon the ground strutting about collecting food, and also when rushing, tumbling, wheeling, or falling upon the wing, Pigeons present various interesting problems of flight and what is known as "display" which should be duly recorded.

The Fantails, for example, attract attention because of the beautiful way in which they spread their tails out fan-like. Others pout and strut, and some assume most comical attitudes.

Most of these Pigeons are very tame and soon make friends, especially when they realise that food is regularly brought for them. As soon as one arrives upon the scene the birds, which have been perched on the surrounding buildings, fly towards the modern St Francis, and will alight on one's outstretched arm, shoulder and even on one's head. As the birds arrive at their destination, observe how they pull themselves up. Notice also how they take to flight, how some walk sedately (or do they hop?), and how others when upon the wing steady themselves in a most delightful way by gliding through the air.

It is probable that among the mixed assembly there may be picked out a few birds which, although somewhat resembling their tame relations, are quite wild. They are members of a well-known woodland species whose loud love-song is among the most soothing of rural sounds.

Do you know this species, and, if so, how can you distinguish it from the rest? Why should it forsake its natural haunts and come to live among the bustle of the city's streets? In its own home it is shy and restless, a sort of woodland rover. Do its changed conditions alter its habits in any way? If so, to what extent?

PROBLEMS

1. Put down some split peas, maize, or corn and invite the birds to feed. Go very slowly forward and see how close you can get to them. Will they perch on your hand? Answer in writing how you succeed.

2. Are all the Pigeons seen tame birds? If not, describe any wild species which you may see and say how you know them from the others.



Fig. 20. Outline of Pigeon

3. Some tame Pigeons are almost sure to perch on a roof near school, or maybe there is a Dovecote close by. If all the Pigeons seen are not alike, how many different varieties can you see?

4. Make six tracings of the outline of a Pigeon (see Fig. 20) and take them into the playground. If you can entice the birds to come

and feed you will obtain a closer view and can observe details as to markings. Shade the outline drawings and take notes of colours so as to represent six different sorts. If you know it, write down the name of each variety.

5. Watch the movements of Pigeons when on the ground, or roof, and if any pout out their breasts, or spread their tails like a fan, make sketches of them and say what breed they are. Also note the colour of the beak and legs.

6. Collect any stray Pigeon feathers, insert them between slits (top and bottom) in notebook, and indicate what variety of Pigeon they belong to.

7. Place a pan of water for the Pigeons to drink from. Do any bathe in the water? How do the birds drink? Sketch one in the act of doing so.

8. If you are able to watch any young Pigeons being fed, state whether the food is carried by the parent in its beak, or in some other way. Is this a regular or irregular occurrence among wild birds?

LESSON 8

ON THE ROOF

As Pigeons have already been given a Lesson to themselves, we can now devote attention to any other kinds of birds that are fond of making a roof a favourite resort.

For birds, the roof of a building forms a capital look-out place. In such a position they are comparatively safe and I have noticed that even such tree and bush-loving species as Blackbirds, Thrushes, Robins, and Tits often make a roof a temporary abiding-place, though there may be many of their more natural sanctuaries within easy distance.

In the neighbourhood of the sea one may expect various kinds of seabirds to gather on a roof, and I observed on a church roof near the Island of Skye in the autumn of 1913 one of the finest gatherings of Great Black Backed Gulls I have ever seen. Gulls are very



Fig. 21. Female Swallow at nest

To *illustrate* the general pose of the Swallow when perching, also the mud nest and the profusion of feathers with which it is lined

fond of perching on a roof when such is available, and I have also known such an ungainly web-footed bird as the Cormorant to use a similar place. It looked strangely out of its element, but this was an interesting

occurrence worth recording. On the continent Storks, as is well known, are frequent inhabitants of housetops.

Away from the sea one may expect to find such birds as Sparrows, Starlings, Swallows, and Swifts using a roof almost regularly, though the Swift does not



Fig. 22. Starling perched on roof

actually perch upon it. All the species mentioned use a roof for nesting purposes, as also the House Martin. If there be creepers, or ivy, growing up the wall of the building, such species as Flycatchers, Robins, Wrens,

and others may also be expected. But we are more directly concerned with the bird life of *the roof*.

Whilst the **Martin** places its mud cradle *under* the eaves and it can easily be seen, the **Swallow** *hides* its somewhat similar homestead in a disused chimney, or inside the roof of a shed (Fig. 21). This favourite summer visitor uses a profusion of feathers to line the interior of its nest, as the illustration shows, and the forked tail-feathers and general pose of this swift-winged bird are also well displayed in the illustration.

The **Sparrow** stuffs up our water spouts, gutters, and ventilation shafts, and its nest often assumes large dimensions, whilst the **Starling** manages to secure an entrance under the eaves, and places its untidy structure in any convenient spot that is available.

Were I asked to name the most frequent and characteristic roof-bird, I should without hesitation choose the Starling. As it perches upon a ridge or gable (Fig. 22) uttering its medley of notes, it cannot fail to attract notice. There it will sit for hours sunning itself as it sings its song.

From the roof it often watches for its prey—for it feeds both upon the ground and in the air—and as it leaves its chosen haunt, takes to flight, and hawks and hovers in the air after some winged creature, it presents a fine study of a familiar bird which adds a good deal of charm to the bird life near at home.

PROBLEMS

1. Make lists of birds which perch in trees near the school and of those which prefer roofs, gables, chimney pots, barns, and outhouses. Also note those birds which perch in the trees and also on buildings, showing no preference for one or the other.

2. Have you noticed any singing birds perch on buildings and utter their songs from such a place? If not, why not? If there are exceptions, state their names and whether it is of frequent occurrence.

3. Make sketches of any birds you see perching and thus affording a close study. Show where feathers are black, or brown, or grey, or white, by shading on the drawing, and write at side such words as "ashy-grey," "lead colour," "greyish-white," "chestnut-brown," etc., whichever best describes the colour of different parts.

4. Take your drawing indoors, finish it neatly, and paint it if you can. Compare your finished answer with a good illustration in a standard book on Birds in the School Library (see Appendix), and write down any important differences you had not noticed.

5. Mention any birds which you have observed to build their nests (*a*) inside roofs, chimneys, barns, etc.; (*b*) under eaves, gutterings, etc. How are the exposed nests built so as to adhere to a perpendicular surface?

6. Do any birds which catch their food in the air use a roof as a watch-tower? Write down the names of at least two kinds which you have seen do this, and any others you may observe.

7. Does the Swift use a roof or building as a suitable perching place? If not, why not?

8. In what other way does the Swift use the roof of a building if not for perching upon or resting?

9. Sketch a Swift during flight, especially the outstretched sickle-shaped wings. Notice the comparatively short tail and neck.

10. Can you find out whether the feet of any of these birds make it easier for them to perch on large flat stones or small round twigs?

LESSON 9

IN THE PARK

Wherever there are open spaces, especially if there be water, shrubs, and trees, sure enough, one may expect to find an abundance of bird life.

Even in the London parks there is a wealth of birds, and Charles Dixon in his interesting book, *The Bird Life of London* (see Appendix), gives a list of no less than 134 species that have been recorded for the metropolis. Some of the occurrences of rare birds in London are most remarkable, and a few may be mentioned. Lord Lansdowne informs me that in August 1913 a Sandpiper appeared for several days in his garden in Berkeley Square, and that he has seen a Cuckoo and several other country birds at various times in the same place. A Puffin flew through the window of a house in Brook Street, which, curiously enough, was then the residence of a noted ornithologist, the late Lord Lilford.

The lights and large sheets of water like the Serpentine in Hyde Park have attracted such oceanic wanderers as the Fork-Tailed and Stormy Petrels; the rock-loving Guillemot has left its coast haunts and flown up the Thames; the Alpine Swift has been obtained at Finchley; the rare Osprey has visited Richmond Park. The Sedge Warbler has been seen on the roof of the Agricultural Hall at Islington; the Goldcrest in the Big Wheel at Earl's Court; the Sparrow Hawk has turned up at Guy's Hospital, and the Woodcock in the Strand. I have myself seen the Greater Whitethroat in the very heart of the City near the Guildhall.

Where there is a sheet of water in a park one can always see a fair collection of aquatic birds, and, even if a good many of them are not British species, there is something of interest to notice in (*a*) the way they paddle and swim; (*b*) the way they obtain their food, e.g. on the surface or underneath; (*c*) their plumage; (*d*) their cries and calls; (*e*) the positions they assume when preening their feathers or showing fight; (*f*) points observed which will make identification sure during a second visit; (*g*) which bird remains under water for the longest period, and so on.

Water birds on the park lake are more easy to watch than those which resort to trees and undergrowth, for they come out more into the open, and become very tame through constant relationship with human beings. Even such shy wild birds as Coots and Moorhens (see Lesson 2) are tame and confiding under artificial conditions, and what one is unable to accomplish under a natural condition can thus be sought for and, in many instances, obtained under artificial conditions.

Note that whilst some of the birds on the park lake are solitary, others cruise about in little companies. It is most interesting to watch their movements, and to observe the answer to a signal from an appointed leader to change their course. When, too, one or more birds leave the water, take to flight, and wheel round in ever increasing circles, rapid sketches may be made of them in the act. If they be Wild Duck, note how the neck and legs are carried, and, if several birds rise together, how they travel through the air in a wedge-shaped line. State, if you can, the different families to which the water birds belong, such as (1) Gulls; (2) Ducks, Geese and Swans; (3) Coot and Moorhen; (4) Pelican and

Cormorant; (5) Heron. (See Notes on Classification in Appendix.)

PROBLEMS

1. Take some breadcrusts to the park, feeding the water birds on the lake. Try how near they will come, gradually throwing the food nearer to the shore without the birds being able to realise this except by degrees.

2. Will any come close enough to feed out of your hand? Can they catch food in their beaks when you throw it? Write down a list of the birds seen, and say how tame each is, thus:—

Birds on the Lake in the Park

Name	How Tame
Canada Goose Egyptian Goose Teal	Feeds out of hand Comes on to path to feed Rather wild; sometimes flying; will not come near shore

3. Try to get a drawing of a Swan. Some of its attitudes are quite easy to draw, as, for example, *A*, *B*, *C*, and *D* (Fig. 23), but you may only have a short time for watching each, so you must look well, and then try to draw from memory.

4. Even if you cannot secure a drawing of the whole bird at one time, perhaps you will get the beak on one occasion, the head and graceful curve of the neck another time, and so on. Finish your drawings afterwards by putting all the separate pieces together and thus completing the whole sketch.

5. Visit the Aviary in the park, and write a list of all the birds you see there. Distinguish, as far as you can, those which are (a) British birds, (b) Foreign birds, and say how you recognise each one seen, thus:—

Birds in the Aviary in the Park

Name	How Distinguished
Goldfinch	Yellow bars on wing, red on head

6 Make a list of any birds in the Aviary which you have already discovered haunt the park *as wild birds* (such as Magpie, Jackdaw, and Starling), and sketch any that appeal to you because of something you notice by means of which you think you will be able to recognise them again when seen in a wild state.

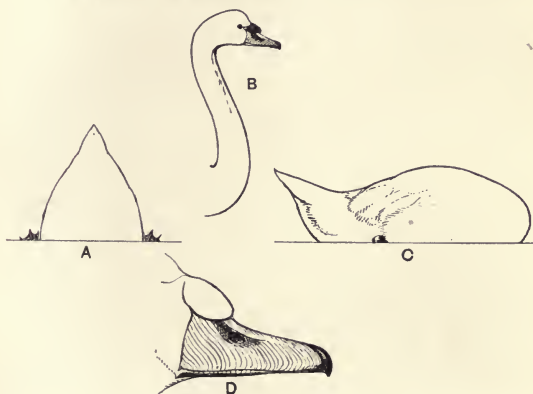


Fig. 23. Four Swan Outlines

7. Pick up any stray feathers at the lake, aviary, or elsewhere. Find out, if you can, what birds they belonged to, why they became dislodged, make drawings of them, and indicate from what part of the bird they came, and how you know this. Consult the diagram of parts of a bird in Appendix.

8. Watch the perching birds in the trees in the park. Make any useful notes concerning them, so that you may call to mind the birds again when you see them. Are there likely to be any nests in the evergreen shrubs, and, if so, to what species will they most probably belong? Why are evergreens such favourite nesting sites for birds which build early in the year?

LESSON 10

INSECT EATERS

In spite of our temperate climate—which has had such a remarkable influence in the history of human progress—there is an abundance of insect life around us. This accounts in a large measure for the number of summer bird migrants which come to us regularly every year, and it is safe to predict that at least 30 of the 40 or so species which visit us (see Appendix) are entirely insectivorous. True, some will take soft fruits during the summer and again in autumn. The melodious Blackcap, for example, is usually attracted during the first days of its arrival to the few lingering ivy berries which still remain, and in September it has a last feed upon the soddened berries of the elder.

It is interesting to notice that these insectivorous birds procure their food in various ways. The Tree Creeper, Nuthatch, and Woodpeckers, for instance, secure the eggs, larvae, or adult insects *as a rule* in trees. True, the Woodpecker is fond of visiting an anthill, and taking toll of the inhabitants in large numbers, but it is mostly a tree-dwelling species. The tree is its more natural haunt, for there it lives, and breeds, and feeds.

Most of the Warblers resort to bushes and thick undergrowth, where they search for and capture their insect prey. The Garden Warbler—a little known, but



Fig. 24. Spotted Flycatcher and young

To *illustrate* the spotted appearance of the three young birds and characteristic pose of the adult

most wonderful song bird—sings and feeds at the same time. It is a very restless bird. It hates to be watched,

and cleverly contrives to hide its sober-coloured body amid the large leaves of a sycamore, in oaks, and similar places.

The Chiff Chaff (as has already been shown in Lesson 5) snatches at insects as it threads its way among the branches of a tall bush, or tree, and will sometimes hover in the air like a Flycatcher. The Willow Warbler will carry out similar movements.

But the most industrious insect eater of all—if we except perhaps the Martin, Swallow, and Swift—is the **Spotted Flycatcher**. When in Scotland in August 1913, I found the hillsides adjoining the Gareloch, in Dumbartonshire, simply alive with “Midges.” They were indeed a perfect pest, and, had it not been for the presence of Flycatchers in large numbers, life would have been very burdensome.

To watch one of these birds at its useful work, or, better still, to have a peep at a young brood accompanied by their parents (Fig. 24), is a sight not easily forgotten. The antics of the fledglings—as each time one of the little company journeys into the air it becomes more proficient in the “art”—are most entertaining. The illustration will give an idea of the homelife of the Spotted Flycatcher, the two chicks on the summit of the left-hand branch having just had their fill, whilst the young one in the fork is, like Oliver Twist, still asking for more!

Nor must one forget that in addition to summer migrants, some of our own indigenous birds are very fond of an insect diet. Among these one must remember those active and useful little birds, the **Titmice**. If one has a nest of the Blue, Coal, or Great Tit under observation in a garden, the insect life with which the

young are constantly fed will be found to be amazing. I find that the Blue and Great Tits bring to their young a small green larva whose identity I have not yet been able to discover (Fig. 25). But the Tits are decidedly useful birds all through the year, and deserve every encouragement we can give them.



Fig. 25. Blue Tit with larva

PROBLEMS

1. Write down the names of not less than six species of birds which feed exclusively upon insects. Are they *resident* or *migratory*, and why?
2. Indicate in the above list (*a*) those which secure their food by hunting among trees and bushes, (*b*) those which hunt for it *upon the wing*.

3. The young of our smaller British birds are, as a rule, fed upon insects. If you can observe any being fed, either in or out of the nest, watch carefully and state what kinds of insects, and in what condition, e.g. egg, larva, pupa, or imago, they are brought by the parent birds.

4. Do both male and female feed the young? Give examples, and say whether the work is evenly divided.

5. Have you noticed a small brown bird which perches on a rail, fence, post, or branch of a tree, and darts into the air every now and again? What is it doing, what is its name, and is any noise made by it which tells you an insect is captured?

6. Watch the bird for at least a quarter of an hour, and state how many journeys it made into the air, and approximate how many insects would be captured in *a day, a week, a month, and six months*, if it hunted for food at the same rate for not less than four hours each day and captured at least one insect every time it flew into the air.

7. State what birds feed upon (a) caterpillars, (b) pupae, (c) adult insects.

8. What small birds are of service in hunting for and capturing insects which, in various stages of development, are found on fruit trees?

9. What kind of beak does a soft-billed, or insectivorous, bird possess? Make a sketch of the head and beak of such a species side by side with that of a hard-billed, or seed eater.

10. Why do so many kinds of insectivorous birds leave us in the autumn? Give a few familiar examples.

11. Walk round a fruit garden. In what condition are the different kinds of fruit—cherries, strawberries, raspberries, currants, gooseberries, plums, pears, apples, etc.? Can you describe any as unripe, ripe or over? What kinds of birds appear to be eating any of the fruits, and which fruits are they attacking?

12. What birds have you seen capturing (a) butterflies, (b) moths, (c) bees, (d) wasps, (e) dragonflies, (f) gnats, (g) beetles?

LESSON 11

SEED · EATERS

The great family of seed-eating birds is the **Finches**, but it should be borne in mind that, at a time when plants are in a blossoming stage, seeds are difficult to procure. Thus it comes about that Finches have to resort to some other kind of food until such time as the wild seeds are ripe. This "other kind of food" consists very largely of insects in various stages of development, and buds. In ascertaining the chief food of our British birds one has to exercise extreme caution in regard to certain species. As an example I may state that whereas the Robin partakes of insects, spiders, and other similar soft-bodied creatures, with scraps in winter, I have watched it during hard frost eating ravenously the fruit of the hawthorn, or rather the pulpy covering of the hard stone inside.

Again, that cheery little tenant of our common lands and waste places, the **Stonechat**, partakes of an insect diet whenever it can obtain it, but I have seen one of these birds struggling with a freshly caught Lizard! Such a soft-billed and inoffensive bird as the Robin has even been known to catch and devour Sticklebacks!

From June to August the seed-eating birds find food readily, as the spring plants have by then gone to seed, and towards August there is an abundance of early fruiting charlock, dock, parsnip, plantain, thistle, yarrow, and others (Fig. 26). The Reed Bunting is specially fond of the seeds of the curled dock.

Even thus early the birds favour hunting in flocks.

and whole hordes of ravenous Linnets may be disturbed feeding in company, whilst mixed flocks of Buntings, Greenfinches, Chaffinches, and others may be discovered in the neighbourhood of a stackyard.

Some of them pick up stray grains that have fallen by the wayside, but the more venturesome will perch on the unthrashed corn stack and pull vigorously at the

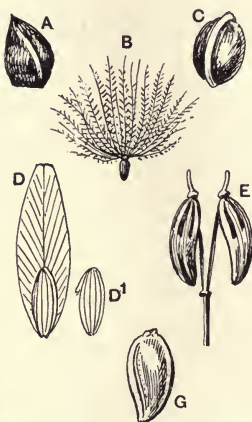


Fig. 26. Seeds of wild plants eaten by hard-billed birds

A. Curled Dock, enlarged. B. Thistle, enlarged. C. Narrow Ribbed Plantain, enlarged. D. Winged seed of Ash, and separate seed. E. Cow Parsnip, enlarged. G. Yarrow, enlarged

ears containing the precious grain. Drove of Sparrows do enormous damage in this respect, for, not only is the grain taken but, by the straw being dislodged, rain, frost, and snow get more easily into the stack and the farmer is often perplexed at the feathered marauders round about him.

When the oats are ripening various kinds of seed eaters visit fields, and have their fill from growing crops. When the crop is cut and shocked, they also feed ravenously as they more easily secure a "foothold." I have even disturbed young Cuckoos thus engaged, and for confirmation would refer the reader to *British Birds*, September, 1913, in which Mr R. B. Lodge writes as follows :—

"On skinning a young Cuckoo recently, which had left the nest, I was greatly surprised to find the stomach full of grains and husks of wheat, some small round seeds like dock, and one small land-snail; but the wheat constituted by far the greater proportion." This is interesting, and tends to prove that even such an insectivorous bird as the Cuckoo will, on occasions, relish a seed diet as indicated.

In this book no attempt has been made to give detailed directions for the dissection of dead birds. We are more concerned with the study of the living. But, of course, it is the examination of the crop of the dead bird which affords the most convincing proof as to its food.

PROBLEMS

1. Obtain from an agricultural seedsman samples of the seeds he offers to sell as food for (a) canaries and other cage birds, (b) pigeons, (c) hens. Describe each sample.

2. Mention any wild seeds upon which you have observed birds feeding, and state which plants and birds are particularly noticeable in this respect in the early days of summer.

3. A brown bird, having prominent white edges to the tail feathers, may perhaps be disturbed feeding in small companies. What species is it, and upon what seeds have you noticed it feeding?

4. Have you observed the Skylark feeding? If so, what does it take in summer time, and how does it hunt for food?

5. Distinguish between those birds which (*a*) pick up loose seeds which have fallen upon the ground, and (*b*) those which extract the seeds on their own account.

6. In spite of the fact that Finches are mostly seed eaters, mention some which take *buds*, and any other food which you have noted. Is there any reason for this?

7. When watching the parent seed-eating birds feeding their young have you obtained any evidence of the food given to the fledglings differing in a marked manner from that of the adults? Give a reason for this.

8. Can you distinguish by sight (*a*) a yellow and brown bird which is a seed eater, (*b*) a grey, black, and rosy bird, (*c*) a small bird which collects its food strutting upon the ground, the male of which is very handsome?

9. Give a list of wild plants by feeding upon the seeds of which certain birds perform good work to the agriculturist in helping to rid the land of weeds. Give also, side by side, the names of the different species of birds which take the seeds in question.

10. What birds visit thistles in late summer and early autumn? How do they extract the seeds, and how can you tell that visits have been made by the birds, even although the birds themselves are not present? Sketch a thistle head before and after such a visit, and, if possible, a bird in the act of feeding.

11. Do the birds which are fond of thistle seeds let you get close to them when feeding? What strikes you as a prominent feature when they fly away?

12. When you find remnants of fir-cones lying on the ground in a wood try whether you can or cannot trace the breakage to any bird.

13. Are any birds feeding on the ripening grain crops? If so, what birds, and on what crops, wheat, barley, oats or rye? How do they attack the grain?

14. Are birds feeding on the stubble fields after the corn has been cut? Are they the same birds that fed on the uncut corn?

15. In what condition are the different wild fruits along the hedgerows—mountain-ash, rose-hips, haws on hawthorn, blackberry, etc.? Is there any evidence that the birds are eating any of these?

16. Have you ever met with any birds which eat butterflies, fish, mice, worms, other birds, ants, gnats, birds' eggs, snails, slugs, or green peas? Have you ever seen any birds trying to dig up seeds that have been sown in a garden?

17. Inquire the prices of dead birds hanging in the poulterer's shop. If you buy birds for food or skinning find out what their crops contain.

LESSON 12

BIRDS OF PREY

Your visit to the Museum (Lesson 24) will enable you to see at close quarters how admirably suited Birds of Prey are for carrying out their work. Owls, Hawks, Harriers, and similar species have sharp beaks, talons, and strong legs. (See Fig. 27 and Frontispiece of Merlin.) These are the "tools" by means of which their hunting and feeding operations are conducted, in addition to which their acute powers of sight are very remarkable.

The **Hawks** are diurnal in their movements, the Owls, for the most part, are nocturnal. Therein is much that will interest those who study birds. The former hover, glide, and swoop, examining as with a field glass the ground below for prey. This consists of other birds as well as frogs, mice, voles, rats, large beetles, and so forth. But in the case of the **Owls** one finds that hovering is of little use and quartering the ground is pressed into service. Whether these haunters of the silences, as they have been called, hunt by sight, scent, or sound does not seem altogether proven. That their eyes are specially fashioned any

one who looks at a tame Owl will have cause to remember, whilst the short but sharp, strong beak, and the claws upon the toes are other features of interest.

Owls possess, too, a noiseless flight to enable them to carry out their night movements successfully. Night animals upon which they prey also come forth under the cover of darkness, and are naturally on their guard



Fig. 27. Head and foot of Sparrow Hawk

against enemies, furred and feathered, which beset them. The noiseless approach of an Owl thus takes them unawares, though why should the hunter so often give vent to its feelings by uttering shrill notes as it proceeds on its eerie pilgrimage? Is it for the purpose of disturbing the prey and making its whereabouts

known? I have not so far seen this point satisfactorily explained.

To visit the long-tenanted haunt of an Owl will provide ample evidence of the kind of food upon which the bird preys. The Owl suffers from indigestion, or rather wishes to guard against it, and, to prevent this, it ejects from its mouth in the form of pellets the remains of undigested food such as fur, feathers, and bones. Very often careful dissection and collection of the remains are necessary before an accurate post-mortem is obtained, but this work can well be undertaken by the boys of our schools, and should provide them with interesting and useful study in winter when outdoor work is not so congenial.

In the nest of a Tawny Owl I have seen such large mammals as full grown rats and rabbits, and whilst there is no doubt that birds of prey, including Owls and Hawks, do take game birds, they perform a useful work in keeping down rodents, small birds, reptiles, etc., and thus helping to preserve the balance of Nature.

The latest comer of all, the Little Owl, introduced into Britain during recent years, is one of the worst enemies of game birds. It is both diurnal and nocturnal, and although, for so small a bird, it is full of courage and audacity, it undoubtedly does a great deal of harm in game-preserves and among the young tenants of the poultry yard. But that it also does good cannot be gainsaid, for it is a lover of both mice and insects. Its native home is Southern and Central Europe, and Asia Minor.

Hawks and Falcons were formerly tamed and trained to the chase. The Frontispiece shows a **Merlin** on a gloved hand. You might try to tame a Sparrow Hawk,

Kestrel or Merlin. For details see some book on Falconry (consult Appendix VII). Find out the meanings of jess, leash, lure, hood.

A Hawk on hand is a splendid hobby for a boy. Why shouldn't you tame a Hawk like the one shown in the Frontispiece for yourself?

PROBLEMS

1. What bird of prey are you likely to see hovering in the air? How does it carry its head and tail? Make a sketch of the bird in the act of hovering, and of any other positions it assumes. Describe its various movements, and state precisely what you consider its intentions are. Does it face towards the wind or down wind?

2. Does the Sparrow Hawk hover in the same way as the bird last under review? If not, state exactly any differences which you have noticed.

3. If your schoolfellows are trying to rear any young birds such as Kestrel, Jackdaw, Magpie, or Seagull, find out what foods they like best.

4. Have you seen a bird of prey pounce upon and capture its prey? If so, was the bird, mammal, frog, fish, or whatever its prey consisted of, caught by means of the bird's talons or beak?

5. In what way do the Kestrel Hawk and the Sparrow Hawk remind you of the Cuckoo, though in no way related?

6. Have you ever observed small birds mobbing a bird of prey? Is there any commotion among small birds when a Kestrel, or Sparrow Hawk, appears? What do the small birds do as a rule when a Hawk makes its appearance?

7. Have you noticed any difference in the sizes of male and female birds of prey, belonging to the same species? If so, which sex is the larger of the two?

8. Are there any birds of prey which hunt at night? Describe their movements as a result of personal observation. Have they a noisy or noiseless flight? State a reason for this? Of what does their prey mostly consist?

PART III

BIRD STUDIES IN AUTUMN

(SEPTEMBER TO NOVEMBER)

LESSON 13

AUTUMN MIGRANTS

In the spring, when everyone is looking anxiously forward to longer and brighter days, our thoughts naturally turn to the birds which build their nests and sing their songs, to the wild and garden flowers that will come into blossom, to the insects which will be seen upon the wing or creeping upon the earth, to the fish leaping in the pool or stream, and countless other outdoor attractions. Most people, too, at such a time have a vague idea that certain kinds of birds, like Swallows, Nightingales, and Cuckoos, may be expected to arrive among us during springtime, and, although their ornithological knowledge is not very great, satisfaction is always expressed when these harbingers of summer have landed on our shores. But the records which appear in newspapers must not always be taken as accurate.

How few there are, apart from bird students and sportsmen, who have any idea of the autumn migrants which come to us (see Appendix), or of the movements

of those summer visitors which bid us adieu when the chill September air, and the increasing difficulty of obtaining a suitable food supply, warn them that the time has come for their departure. How few, too, realise that, although we lose so many species, and even



Fig. 28. Young Woodcock skulking
To illustrate protective resemblance

some of our own familiar birds, in autumn, their places are taken by other strange visitors from northern climes and from Continental shores. The truth is that, except to the enthusiast, outdoor life is supposed to be on the wane after summer is past, and the all-round-the-year student has the countryside pretty much to himself.

In autumn, then, we are visited by such birds as Fieldfares, Redwings, Bramblings, Snow Buntings, Redpolls, Ducks, Geese, Swans, many kinds of Seabirds which breed in the far north and only come to us to spend the winter, and others which need not be mentioned here.



Fig. 29. Head and foot of Snipe

Certain species which nest in some parts of Britain during summer are entirely unknown in others except as autumn visitors. The **Woodcock** is one of these. This favourite sporting bird is absent in summer in many districts to which, curiously enough, it is a regular autumn migrant. So also is the Common Snipe which

may be expected to arrive during September and to remain in a certain neighbourhood until the following March or April.

The Woodcock is a most interesting species, and, although by September the young are becoming quite large birds, their skulking habits are none the less interesting at an earlier stage of development, as the illustration shows (Fig. 28). The adult bird is also splendidly protected in the woods and plantations that it frequents, and there is an old couplet which tells us that

"As fools are known by looking wise
So men find Woodcock by their eyes."

The large prominent eye of this bird, as also that of its cousin the **Snipe** (Fig. 29), is placed near the forehead, and the long beak, admirably adapted for probing, the short tail, and sober plumage are also features of interest.

The great breeding-ground of this bird is in northern Europe, and, as soon as the March winds blow, most Woodcocks leave us, though some remain behind to nest in certain north country districts.

In autumn, too, whole hordes of Skylarks, Finches, and hungry Wood Pigeons reach our shores from across the Channel, whilst many of our own indigenous birds go south, returning to us again in the early days of spring when those from the Continent go back to their summer homes. All birds are more or less migratory, or of a roving disposition, as the ringed birds which have been captured clearly show.

PROBLEMS

1. Mention the names of two autumn migrants which belong to the Thrush family. Describe in what way they differ from the Song Thrush, and how you may distinguish them.

2. Write down one word in each case which is a fair imitation of the alarm-note they utter. Are the alarm-notes quite distinct? Which is the louder of the two?

3. Do these two species of birds travel about in flocks? Where would you expect to find them on, say, a cold day in October? What would you expect them to be doing?

4. Make a sketch of the head of a Fieldfare and Redwing. What is there of note over the eye?

5. Mention any other autumn migrants you have noticed. Give your opinion as to *why* they come to us for the winter, and from *whence* they have in all probability come.

6. There is an autumn migrant which haunts large open fields during the winter. What is its name? Is there anything of special interest connected with its plumage?

7. Have you observed a small bird, something like a Chaffinch, which visits beech woods in autumn? In what way does it differ from a Chaffinch? Is there any special means by which it may be picked out of a flock of mixed birds?

8. Why is the Short-Eared Owl often referred to as the Woodcock Owl?

LESSON 14

BY THE SHORE

The bird life of the shore varies not only according to the time of year at which it is visited, but also in regard to its "make-up." Thus, unless there is soft mud or pools it is almost hopeless to expect to find any wading birds, and, on the other hand, unless there are rocks, or boulders, one is not likely to see cliff-dwelling birds, such as Puffins and Guillemots.

One of the most characteristic wading birds you are likely to see is the **Redshank** (Fig. 30). A glance at this species will at once reveal how excellently suited it is to the life it leads. It has long red legs (hence it is called in some districts Red Legged Horseman, and has for the same reason also acquired its name of Redshank) and a long beak. Its long legs enable it to wade into shallow pools, and to tread lightly over soft mud, for the purpose

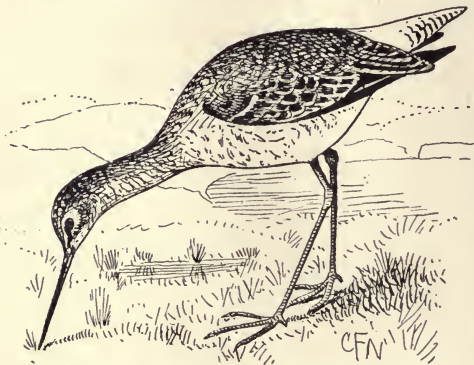


Fig. 30. Redshank probing for food

of hunting for such creatures as marine worms, insects, and small crustaceans, its long beak being suited to this purpose. Have you observed this bird of the shore bob up and down as if balancing itself on stilts? Why does it do this? Are you acquainted with its shrill, oft-repeated cry? Have you tried to imitate the note, and watched the effect upon any specimen within earshot? The result is often most interesting,

and at Fort William I called a bird from the shore, close by the Hotel where I was staying, over the road, to the Hotel steps!

Similarly, I once stopped a bird in flight as it came swinging at high speed over a hedgerow in Norfolk. The bird pulled itself up abruptly as I sounded the alarm, landed in the road, strutted about on "sentry go," was thoroughly disgusted at finding itself deceived, and then resumed its journey.



Fig. 31. A small colony of Guillemots
To illustrate a colonising species, and the precipitous
nature of the environment

You might take with you, especially by the shore, some of the bird calls sold by dealers (see Appendix). Their use may often prove distinctly useful and the results interesting.

If there are rocks by the shore, there one should find the **Guillemot**, if only a small colony as shown in Fig. 31. This typical Seabird is a rock-dweller. Constant

habitation near and upon rocks and cliffs, except when food is being secured in the sea, has resulted in the Guillemot becoming a bad walker, and you will notice



Fig. 32. The watchful Heron

To illustrate the Heron's attitude just before it "fishes" for food.
Observe the long beak, wings, and legs

its legs are placed far back, and that the bird assumes almost an upright position.

In its black and white dress this species is a distinct

ornament to its surroundings. It is a social bird, large numbers living together in perfect harmony.

When a small company are seen upon the sea it will be noticed that they sit fairly close in the water. Do they dive? Which do you consider the better diver of the two, the Guillemot or Cormorant? Do they remain under the water for any length of time? Have you ever timed them?

If a quiet stretch of shore, or a secluded bay, is visited, there, especially towards evening and at low tide, a mixed assembly of feathered folk will be gathered together. Among these there is more than likely to be the watchful **Heron** (Fig. 32). It will probably prove to be the largest bird of the company, and can be distinguished, when standing in the water, by its long legs and shrugged shoulders. To watch it fishing provides abundant interest, and, as it takes to flight, the wide expanse of wing, the long legs carried outstretched behind, and the lengthy neck are features worth studying and sketching.

PROBLEMS

1. Do any birds by the water's edge fly up at your approach? If so, do the birds fly away in a company or singly? Do they utter an alarm cry? Write it down in words if possible.

2. Have any of the birds disturbed got white feathers? If so, where are the feathers situated?

3. Do the birds disturbed fly high or low? Do they fly over the sea or land?

4. Do any birds remain by the shore in spite of your approach? Are they small or large birds which thus remain? What are they doing? Make sketches of any curious positions in which you notice them.

5. Are any Seabirds flying leisurely or otherwise over the water? How can you distinguish them? Sketch one or two of the birds *as seen flying*.

6. Do you see a small Gull-like bird hovering over the water? Describe the shape of its wings and the colour of its head. How does it seem to get its food?

7. Where the shore is sandy, or muddy, look for the footmarks of any birds. Can you tell whether the birds which made the marks were web-footed or otherwise? Count how many toes they possessed. Can you use plaster of Paris to take casts of the footmarks?

8. Draw several examples of the footmarks seen natural size and indicate the names of the owners.

9. Are any birds resting or swimming in the sea? Do any of them dive, or disappear below the surface? If so, how long do they remain underneath?

10. Are there any birds on the rocks near the shore? What are they like? Can you see their wings? Would you consider them good fliers?

11. Write a list of all the different birds you have seen on the shore.

12. Explain how you distinguish the different kinds of (a) Seagulls, (b) Waders, (c) Ducks.

13. Visit a Museum and say how each of the following differs from the picture of a wading bird (Fig. 30):—Guillemot, Cormorant, Puffin, Tern.

14. Make six pencil copies of Fig. 30 on tracing paper. Now alter these drawings to make them look like (a) Lapwing, (b) Golden Plover, (c) Oystercatcher, (d) Curlew, (e) Gull, (f) Dunlin.

LESSON 15

IN THE WOOD

As soon as the leaves begin to fall in autumn, woodland birds become much more prominent. The abundance of summer foliage has hidden them from view, and though our migratory birds have nearly all taken their departure now, there are many resident species that remain. Others, too, come to us, as discovered in Lesson 13. You will visit the woods again in winter (Lesson 22) when a further opportunity will be given of studying the bird life there. To-day you may give your attention to one or two tree-loving birds whose habits can now be followed to greater advantage.

It may be mentioned that certain kinds of woodland birds are devoted to certain kinds of trees. Thus, it is a good plan to note down not only the different birds that are recorded (either by sight or sound), but also the names of the trees for which they show a liking. You will also be able to ascertain, as a result of your observations, which trees are among the first to lose their leaves, and again in the spring you will also ascertain those which are among the first to bear new leaves.

I have always found that the **Nuthatch** is very partial to oak woods. It will also be found elsewhere—in a fir wood for example—but where there are plenty of oaks and nut hazels, there search may be made for this species with a good chance of success.

An examination of Fig. 33 will give an idea of the general appearance of the Nuthatch. It has a sharp,

strong beak, a plump body, short tail, and short legs. If it possessed long legs like the Redshank you saw by the shore (Lesson 14) it would be unable to scamper up and down the trunk of a tree and up and along its branches. Similarly, if it resorted to the shore, it would be strangely out of its element. Watch the

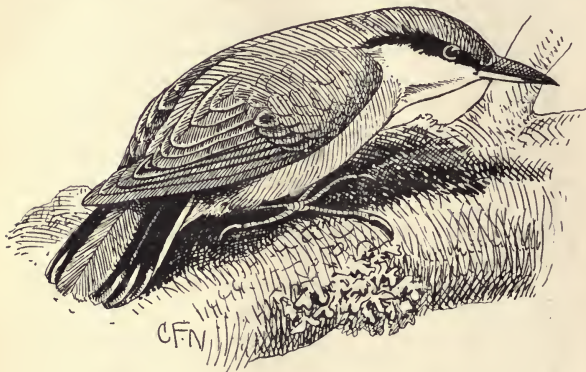


Fig. 33. Nuthatch

bird as it moves along the trunk of a tree and notice how it brings its breast bone close to the object upon which it is at work. This gives the Nuthatch greater "purchase," as it were, and is one of the means adopted to prevent it from falling. It does not possess the pointed tail feathers of the Woodpecker, its tail being more wedge-shaped. Of what does its food consist? When they can be obtained, insects are resorted to, but in autumn and winter it secures such things as nuts, acorns, beech mast, and various berries. It actually

lays by a store of nuts to tide it over the winter. Have you ever succeeded in finding these? If so, were they above or below ground?

The **Woodpecker** is, of course, a typical bird of the



Fig. 34. Great Spotted Woodpecker climbing
To *illustrate* the use of the short legs, foot, and
tail feathers for climbing purposes

wood as its name implies. Of the three resident species the handsome Great Spotted (Fig. 34) is rare.

This bird is admirably adapted to climbing purposes, as the illustration shows. For the most part it is a

black and white bird, with a patch of crimson on the head, and the same colour on the belly, and under tail-coverts. The female does not possess the crimson on the head, and in this way she may be distinguished from her handsome mate. Have you any evidence that Woodpeckers pair for life? Are they ever seen in flocks?

The strong beak with which this bird is provided enables it to secure food of various kinds. The diet, as a matter of fact, largely resembles, as one might expect, that of the Nuthatch, but, like the Green Woodpecker, it sometimes comes to ground and visits anthills. It has a long sticky tongue with which it licks up insects after the manner of the Ant-Eater, which, of course, is a mammal and not a bird.

One morning in rural England I was fortunate enough to see all three species of British nesting Woodpeckers in one little wood. This was a rare experience, but if you only make acquaintance with one of the two species I have mentioned, your journey to the wood will not have been in vain.

PROBLEMS

1. As you enter a wood, note and remark upon the birds which are disturbed as a result, and describe their movements. Why should some take their departure and others remain? Do any of the birds leave the wood entirely and make for the open country?

2. Your success in seeing birds in the wood will again depend very much on your seeing them before they see you. Do you tread just anywhere on broken branches and dead leaves, or do you pick your steps so that your feet fall on grass and soft moss? Can you walk quite silently like Indian hunters in single file?

3. If a Woodpecker, or other tree-loving species, is disturbed upon the ground, what is it doing there, and where does it fly, and how?

4. In what trees do Rooks build? Can you climb these without climbing irons? with irons?

5. If there are any Gamebirds in the wood, describe their movements (*a*) when disturbed, (*b*) when seen in the distance, and (*c*) also mention any note which they utter.

6. Which woodland bird utters a loud, harsh, little-varied note, and why?

7. What bird of the wood preys upon the eggs and young of other birds when these are obtainable? Give your opinion as to whether it does good or harm by carrying out these operations, and do you think it is cruel?

8. Mention three species of woodland birds which are highly coloured and utter harsh notes. One of them shouts a succession of laughter-like notes, and, in consequence, country people associate its cry with the approach of rain. What is its name and also some of its local ones? Several of these refer to its note and others to its long beak and tongue. In what way is the long tongue of the bird in question of service to it, in the treetops and upon the ground?

9. Of all the birds you saw in the wood which was quietest in its flight? which noisiest? which was most easily disturbed? to which did you get nearest?

10. Write a complete list of all the birds detected in the wood. If a bird is called by more than one name, write all the names you know for it. Mark those birds on the list which you yourself saw.

11. Which trees are easiest to climb? which most difficult? Compare your experiences of Scots pine, spruce fir and larch.

12. Of the birds disturbed name any which (*a*) run away along the ground, (*b*) fly away into other trees.

13. Are there any birds which you hear before you see them? Describe their notes.

14. Have you seen any birds (*a*) climbing the vertical trunks of trees, (*b*) hopping about and picking at the smaller twigs?

15. Watch a Parrot kept in a cage or aviary. How many toes has it? How does it catch hold?

LESSON 16

DOWN THE LANE

It will be a good plan for some of the class to go down the field side of the hedge whilst the remainder take to the lane. More birds will, as a result, be discovered, and notes can afterwards be prepared and comparisons made.

But, in any case, absolute quietness is essential, for the autumn migrants that have arrived (see Lesson 13), and even our own familiar species, are shy feeders, and, as such, you must consider them to-day. That is to say, the birds you will observe down the lane are almost sure to be *feeding*, for the hedgerow affords them a capital hunting ground, more especially in autumn when the blackthorn, bramble, buckthorn, bryony, dogwood, elder, hawthorn, privet, wild rose, and other plants are in fruit.

It is probable that if a sharp lookout be kept one or more summer migrants will still be discovered, for, even late in September I have seen the Lesser Whitethroat, and disturbed a Chiff Chaff on October 6th. Some larvae are still to be found. These are probably hibernators during winter, but that all do not survive, even until the period of hibernation has arrived, is shown by the presence of a Greater Whitethroat, which, on this chill autumn day, is having a last meal before taking its departure to its winter home. I have watched one of these dapper little birds in autumn catch and devour a green caterpillar with evident pride, wipe its beak carefully, and then snatch at and secure an elderberry close by as a sort of dessert (Fig. 35).

The bird population met with on to-day's ramble will, however, mostly consist of Blackbirds, Buntings, Field-fares, Finches, Redwings, Robins, Starlings, Thrushes and Wrens. Numbers of Sparrows will be along the hedge-row. Many of them have been gleaning in the adjoining



Fig. 35. Greater Whitethroat feeding on elderberries

fields, and fly to the hedge for cover and rest. It will be as well to devote attention to these flocks of Sparrows, so as to ascertain which sex predominates, male or female. Can you easily distinguish one from the other?

Some birds are posted on the topmost branches of

the taller bushes, and in the trees. These appear to be acting the part of sentinels, uttering warning notes as you approach. So well are these manœuvres carried out, that I have had to wait two hours to obtain a view of a **Redwing** at close quarters. Though there may be many of these autumn migrants all along the hedgerow—feeding upon the hips and haws—they are most wary birds, take to wing at the slightest alarm, and what is also noticeable, and, I must confess, somewhat irritating, they manage to fly to the cover that is still available in a very clever way.

The Redwing's northern cousin, the **Fieldfare**, is not quite so shy and comes more into the open. It is a sky-pilot, and, instead of flying to cover, makes its way upwards into the air, careering along at high speed, crying loudly as it goes, "chack, chack, chack," often repeated.

The Finches and other birds down the lane are less timorous, for they are more accustomed to their surroundings, but all seem to recognise that hard times are near at hand, and that if they are to survive the winter, with its attendant dangers, a well-nourished body is a necessity, and food must be secured.

When food was more plentiful and cover available, survival was not nearly so difficult, but the time of year has now come when it means hard hunting for bird, beast, and man.

PROBLEMS

1. Note the wild fruits to be seen and write down a list of those you know, with a sketch of each. Proceed cautiously, and observe any birds that are feeding upon them. In the first-mentioned list place the names of any birds seen feeding against the particular fruit for which they show a liking.

2. What bird have you noticed in autumn feeding on blackberries, and how can you distinguish it when seen?

3. Which wild fruits are eaten *first* as a general rule, and why?

4. Are there many birds feeding together? If so, to what species do they belong, and what fruit is it which attracts them? Have you noticed that, after feeding ravenously on the fruit in question, the birds display any curious movements?

5. Are *red* berries or *black* berries most prominent down the lane to-day? Which of the two appear to attract the birds most, or do they seem to be equally acceptable?

6. Are any birds feeding on the seeds of wild plants? Some of the seeds of herbaceous wild plants are now scattered upon the ground. Mention any birds which are engaged picking them up, rather than extracting them on their own account.

7. A small company of birds with round bodies, small heads, and long tails may be seen searching the bushes for food and uttering a subdued sibilous chatter. What are they, and what food are they in search of?

8. Do you see any summer migrants along the hedgerow still? If so, mention the names of the species and what they are doing.

LESSON 17

THE LAKE IN THE PARK

Since you visited the lake in the park during summer (Lesson 9) several fresh visitors have probably arrived. New birds, too, have perhaps been added, and a search can be made for old favourites.

Fig. 36 is a typical scene that a well-stocked park lake often presents. Such an opportunity should not be lost of observing the movements of birds like Cranes and Pelicans, both of which are shown in the group in the illustration.

Though some of these foreign birds look strangely out of place in Britain, it is interesting to watch them, and to study their habits, even in a state of confinement.

The Crane, for example, is a graceful looking bird, with long legs, and an ornamental plumage. On the other hand the **Pelican** impresses one by its massive and grotesque appearance. Though it is not, as a wag



Fig. 36. Pelicans, Cranes, and Ducks in the Park

To illustrate the opportunities which exist for studying semi-domestic birds at close quarters under artificial conditions

at the London Zoo described the Toucan, "all beak with a body tacked on," the Pelican's formidable beak and pouch are sure to attract notice. By watching this bird a series of sketches can be obtained of great interest. If the keeper can be found when it is feeding-time, further entertainment will be provided as the big white bird opens its enormous beak, and swallows the fishes provided for its meal.

There is also a large Duck with which you should make acquaintance, by name the **Sheld-Drake** (male), or Sheld-Duck (female) (Fig. 37). It is almost the size of



Fig. 37. Sheld-Drake (from a stuffed specimen)

To *illustrate* a marram-laden sandhill in which the Sheld-Drake burrows, the eggs being laid at the extremity of the tunnel. This handsome Duck is often kept in a semi-domestic state on inland waters

a Goose that has, as a lady once remarked, “guinea-pig colours.” It is not at all a bad description, for the dress is made up of chestnut, and white and black, with

a beautiful green head and neck, and a bright red bill. It is said to be called Sheld-Duck because "it is many coloured like a painted shield," but this is doubtful.

But it is not sufficient to be able to tell these Ducks, Geese, Cranes, Pelicans, Gulls, and others merely *by name*. As you come to watch each one, you are sure to notice some little peculiarity of which a note should be made. Some Ducks will be seen which secure their food on the surface of the water, others dive right underneath, and others again stand on their heads in the water with their hindquarters sticking up in a most curious way. Note, too, the paddling of the feet.

It is likely that some Gulls will make the lake their home during the winter, more especially the **Black Headed Gull**, which loses the blackish head when autumn approaches. Food thrown to these welcome visitors will result in a series of movements, both in and out of the water, of great interest, and, as shown in Problems that are set out at the end of this Lesson, rapid sketches may be made as each movement strikes the eye of the observer. These can all be pieced together afterwards.

Instead of waiting for the dry bread or biscuit (of which you will have brought a good supply) to reach the water, the Gulls swoop for it in the air and there is much tugging and screaming before the tasty tit-bit is finally secured. The scramble reminds one of the tossing of the pancake in the Hall of Westminster School on Shrove Tuesday!

Are there any markings left on the head to indicate where the brownish-black cap was previously worn? Notice the small webbed feet as the bird hovers overhead, ready at any moment to alight upon the water,

the colour of the beak and legs, and the discomfiture of the Ducks and Geese which appear to be jealous of the aerial movements of these wild visitors.

PROBLEMS

1. If you have some pieces of stale bread, or dry biscuit, throw some in the air and state which birds, if any, catch them *before they fall*.

2. Do the birds when resting on the water appear smaller or larger than when upon the wing? Make a sketch showing one of the birds in each position. Give a short description of the points of difference which occur to you. Of what shape is the beak? Make a sketch of it. You must not expect to do everything all at once. First try to **see** the bird, and to observe every detail. Then try to **remember** what you see. You won't remember much. Look again. Try to see more exactly and learn just one line (*A*) the curve of the Gull's back, but draw larger, thus (*B*)

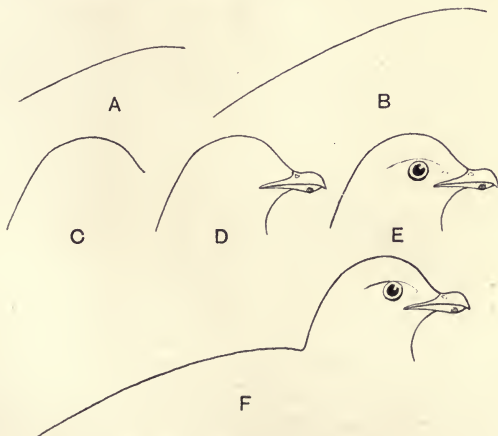


Fig. 38. Curves and lines of Gull

next notice its head (*C*), then fit on the beak (*D*), then the eye (*E*), and now perhaps the bird has flown; but that need not hinder you fitting head and back together (*F*).

It is more difficult to draw a bird on the wing. But watch. There are certain positions which it takes again and again, and in which it is nearly steady, for instance, when it is hovering over the water, or just dropping, or just rising. Choose the position you want to draw and watch again. Watch its wing, its tail. The tail moves less and is easier to sketch. It is a triangle. Is it equilateral? Draw it thus (*G*)



G

Now the wing. It has a corner in it where it is not straight—not so sharp as a right angle, one line longer than another—one line nearly straight, the other bent, thus (*H*)



H

3. Make a list of the different kinds of Ducks you can recognise, and state by what means you know them, thus :—

Ducks seen on the lake in the park

Date_____

Name of Bird	How to know it
Tufted Duck	Black, with tuft of feathers at back of head. Bright little yellow eyes, blue beak. Constantly diving

4. Draw a Duck's broad, flat, long bill, and, side by side with it, that of a Gull for comparison. How does the flat beak of the Duck assist it to obtain food?

5. Although their beaks are so different, why are their feet the same, *webbed*?

6. Is there a great difference in plumage between a male (Drake or Mallard) and female (Duck) Wild Duck?

7. Notice the colour of the bill and feet of the birds at the lake for this is very helpful in distinguishing Ducks, as well as Seabirds, especially Gulls.

8. Do you know three species of Ducks, all smaller than the Wild Duck, whose names are Pochard, Widgeon and Teal? Briefly describe any points which you consider are worth noting and which will be helpful when you see them again.

9. Examine the birds hanging in the poulterers' shops. How many sorts of Ducks do you recognise?

LESSON 18

MOULTING

Moulting in general may briefly be described as the means by which birds get rid of and renew their feathers, and crustacea and insects cast off and renew their covering. The term may also be applied to the

processes in the course of which mammals shed their hair and snakes slough their skins.

When the cares of parentage are at an end towards July, our indigenous birds are, naturally enough, somewhat tired by their labours. Their plumage, too, is not nearly so trim and neat as it was when they were nesting earlier in the year, and some species—Robins in particular—become bald-headed and perhaps tailless. At a time when birds are moulting specimens may often be easily captured and examined. As I write I have in my possession a Linnet which only has two tail feathers. I came across the bird along a lane as I was cycling, and only by steering quickly on one side was I able to prevent a collision. Naturally, I expected the bird to rise as I approached, but, instead of that, it shuffled to the green sward at the side of the lane and capture was soon effected. Having lost most of its tail feathers, apparently the Linnet's steering gear was sadly put out of order as a result, and its balance upset, so that flight was difficult, if not impossible. Be on the look-out, therefore, for birds when moulting as an opportunity is then presented of examining them in the flesh. They should, of course, be liberated afterwards. If you have a supply of rings for putting on birds' legs this is an opportunity of experimenting with them.

Most British birds appear to go into hiding when passing through their moult, and if one sees a specimen which looks ill, the chances are that it is merely moping and waiting until its new feathers appear.

When one considers the enormous number of feathers that must be shed every autumn by moulting birds it is astonishing that they are not littered here, there, and everywhere. What becomes of them?

Young **Robins** are worth watching when exchanging their spotted waistcoats for the familiar red vest known to everyone (Fig. 39). Before the complete change is carried out, one can see faint flecks of red in process of development, and it is interesting to note the variety of stages that exist even in the case of such a familiar bird.



Fig. 39. Young Robin before moulting in Autumn

The Robin, in its infancy, is one of the few birds which is totally unlike its parents. Both male and female Redbreasts have the characteristic warm vest which, on a cold winter's day, looks so snug and warm, but the young, until the autumn moult, are like small Thrushes, and in consequence often deceive people who know little of bird life. Young Goldfinches (called

Greypates) are similarly deceptive, and in October, when family parties of these birds visit thistles, and even come into our gardens to feed upon the oily seeds of the sunflower or rudbeckia, close comparisons may be made between the young birds of the year and the adults. In view of the wear and tear of the previous months, the all-important pairing season the following spring, and the necessity of a warm coat to tide them over winter, small wonder that birds moult, and that during this period so many interesting observations may be made.

PROBLEMS

1. Mention the name of a famous song bird which, having sung more or less all the year, ceases its singing when autumn has arrived. Why does it cease singing, and what happens before it resumes in September or October?

2. Have you noticed any change in the plumage of the male Wild Duck (the Drake) as between the summer and autumn attire? If so, which is the finer plumage of the two?

3. Describe in detail the plumage of young Robins until autumn, and also what dress they wear after moulting.

4. Why is it necessary for birds to moult?

5. Have you observed any of our summer migrants moulting before they leave for their winter quarters? If not, may we assume that they moult after safe arrival in Africa, or India, or wherever the winter is passed?

6. Be on the look-out for stray feathers at this season. Preserve them in a book, writing under each one the date, where found, and the name of the owner.

7. Have you observed that birds, when moulting, are more active or less active than at other times? Perhaps you have a Canary, or some other cage bird, and can describe what happens with regard to the same.

8. There is one bird at least that moults very early and whose feathers may always be found during the months of May and early June. What is its name?

9. Have you noticed the Black Headed Gull in Winter? In what way does its head differ in summer? Draw a sketch of the head of this bird at both seasons.

10. In the Museum. Describe how the young differ from the adults in (a) Gulls, (b) Blackbird, (c) Chaffinch, (d) House Sparrow, (e) Swan.

PART IV

BIRD STUDIES IN WINTER

(DECEMBER TO FEBRUARY)

LESSON 19

ACROSS THE FIELDS

A walk across the fields in winter, especially if there has been hard frost over night, with a rapid thaw at the rising of the sun, is bound to reveal renewed energy in the realm of birdland.

Insects, worms, slugs, snails, spiders, and other soft-bodied creatures are now difficult to procure. Though many species of *perching* birds resort to trees and bushes for the purpose of securing seeds of various kinds (and even Pheasants will fly into tall trees with this object in view when they find ground-hunting somewhat disappointing), those birds which resort to an insect diet, and mostly dwell upon the ground, find a long search necessary before their appetite is satisfied.

Where the sun catches a certain spot, loosening the leaves which only an hour or two before had been joined together by the hard frost, and also softening the soil, there one may expect to find a gathering

of birds. Such an assembly is often a curious mixture, and a note in my Diary reminds me that on December 12th, 1911, I observed the following different species searching for food quite close to one another in a warm corner of a damp meadow :—Blackbird, Hedge Accentor, Jay, Pied Wagtail, Redwing, Common Snipe, Starling, Linnet, and other Finches.



Fig. 40. Skylark soaring

Look then where the ground has become softened after a frost, and a varied collection of wild birds should be seen which will amply reward the observer. If such a scene as I witnessed in December 1911 is discovered, then a "halt" may be called, and there will be no need to wander farther afield.

It is more than probable that a Skylark will be soaring and singing overhead (Fig. 40) in spite of the wintry surroundings. Note that it soars with its head to the wind; in this way you may find out the direction of the wind.

Chief attention may, however, be directed to the *movements* of the seekers for food *as seen upon the ground*, for, whilst some walk (Pied Wagtail and Starling), others hop (Linnet and Redwing). Some (such as the Snipe) will be seen probing the ground for food, others (such as the Blackbird and Thrush) will probably be scratching among fallen leaves with their feet, and then picking them over with their beaks.

The Hedge Accentor shuffles along with pleasing gait, now to right, then to left, carefully examining every nook and corner for insects and other small prey.

Note also across the fields as you pass along that most of the birds are in flocks, and that, where they are stationary, they face the wind. Why is this?

It is interesting to observe, too, that sentinels, or scouts, are posted at various points, so that the birds may be warned in good time when danger threatens. If a Kestrel suddenly appears, and there are Rooks and Jackdaws feeding in the field close by, one or two members of the company may be told off to entice, or drive, the intruder away. As a Jackdaw approaches a Kestrel many interesting notes may be made and rapid sketches drawn of the movements of the two birds in mid-air—an instance of well-regulated action on the part of a bird (the Jackdaw) whose family history is full of cunning, sagacity, and cuteness, delightful to notice.

PROBLEMS

1. Do you see any fairly large brown birds on the stubble field? Are they in *flocks*, or to be more accurate, *coveys*? How many are there altogether in one covey?

2. Are they ground loving birds and what makes you think so? Are the coveys likely to be family parties of young birds of the year, with their parents? How do they fly when disturbed, e.g. high or low, and do they make any noise as they take to wing? How do we associate the birds in question with the month of September?

3. Are any birds singing this cold wintry day? Mention two which may now be heard in song, one of which has a red breast and the other a spotted breast and a crest. How long has the last named bird been silent, or "off song" as it is called? When do you expect to hear the male singing again *at his best*?

4. Are there any other flocks of birds to be seen across the fields to-day? Describe what looks at a distance like a black and white bird, but is, in reality, dark green, white, and ochre-coloured. Has it a crest? It utters a plaintive double-note after which it has been given one of its common names. Write down the note, and the bird's name. Make a sketch of the bird as seen when wheeling through the air, and also when it has alighted upon the ground.

5. Are there large flocks of noisy Sparrows to be seen in the fields? What are they doing? Are there any other kinds of birds in company with them?

6. Is there to be seen in flocks a brown bird with prominent white feathers in the tail? What is its name?

LESSON 20

IN THE PARK

The trees in the park are leafless now, and though the evergreen shrubs afford the birds shelter (of which they are not slow to take advantage) it is a good plan to pay special attention to the birds *in the trees*, and also to those which are moving about *on the grass*.

Most of the birds seen to-day will belong to the Passeres, or Perchers, that is, birds which are specially adapted for living in trees, their feet being so fashioned that the owners may grip a branch securely. What would happen if a web-footed bird like a Duck endeavoured to perch on a branch, or wanted to thread its way through the twigs? Surely it would cut a sorry figure, for its feet are adapted for paddling, and swimming in water, and it is only able to waddle along the ground.

Have you ever noticed how excellently suited perching birds are for the life they lead? Watch them to-day as they fly into the trees, and notice how they alight, and how deftly they pass from branch to branch and twig to twig. This art of balancing on pliant twigs, at a considerable height, has, during the centuries, been brought to a high state of perfection by the birds. One often wonders when a bird is moving about so quickly in a thorny or prickly bush that it does not meet with an accident. No matter how thick the bush may be, the bird manages to steer clear of all obstacles, and possesses the means whereby it may thread its way without disaster into the very heart of a hawthorn, blackthorn, rose, bramble, furze, or other armoured bush.

Probably a tapping will be heard in the tree-tops to-day, for, as discovered in the last lesson, hard weather means hard hunting for wild birds.

The various species of Tits are sure to be busily engaged searching for food, and, as they are expert acrobats, their performances in the trees and bushes are well worth your close attention.

One of those in the tree-tops to-day has, you will observe, a jet black head, and, because of this, we call it

the **Coal Tit** (Fig. 41). It does not seem so fond of singing as its two cousins, the Blue and Great Tits, but, when it does venture to utter a note, it sounds to me curiously like its double-barrelled name. Can you hear the Coal Tit singing to-day, and, if so, what is your opinion of it?



Fig. 41. Coal Tit

Look carefully at *all* the Sparrows you see, both on the ground and in the trees and bushes. You know quite well by sight the male **House Sparrow** with his black bib under the chin, and the broad white bar near the shoulder, but are you acquainted with the more

soberly-clad *female* House Sparrow? There is also the **Tree Sparrow**.

Few people seem able to recognise this species, and you would do well to watch *all* the Sparrows which you see in the hope of picking out some that are different from the rest. The *House Sparrow* has a *grey head* and a *single* white bar on the wing, but the *Tree Sparrow* (which is much more of an insect eater than its cousin) has a *chocolate-coloured head*, and a *double* white bar on the wing. It utters, too, a more shrill chirp than the commoner species, though it is important to remember that both kinds build their nests in trees. The House Sparrow also resorts to buildings for nesting purposes, and the Tree Sparrow I find is one of the first birds in my district to take possession of a nesting-box. Thus it is fond of holes in trees as a suitable nesting-site.

PROBLEMS

1. Give a list of birds to be seen in the park in winter and then mark those which you actually do observe, and say exactly where seen.
2. If the pond, or lake, be excluded, what kinds of birds are you likely to see, that is, to what great *order* will they mostly belong?
3. Describe the difference between the male and female Black-bird.
4. How would you tell a Jackdaw (*a*) upon the wing; (*b*) upon the ground? With what other birds does the Jackdaw often associate? Can you distinguish it by its note?
5. Now that the trees are leafless, look carefully into them and note the birds to be seen there. Are they *ALL* *perchers*? If not, state those which are not, and say what you know about them.
6. Watch the Rooks flying and alighting. Sketch the head of one if you can approach near enough to obtain a good view. Does the Rook hop or walk? Mention two of its relatives to be seen in the park, either in the trees, or upon the grass, and state their method of progression also.

7. There are almost sure to be several Robins in the park. Keep a sharp look-out for those which sing and those which do not sing, so as to pick out male and female. Describe the result of your observations.

8. A Hedge Accentor may be observed. What is the colour of its legs and feet? Is it to be heard singing in winter?

9. Do you notice any Chaffinches? If so, are the males and females in separate flocks? How do you distinguish the sexes?

10. Are there any old nests in the tall trees, or any holes used by Woodpeckers? To whom do the former belong, and how many nests are there? Are there as many nests as last year, or fewer? Refer to your own notebook, or ask someone for the necessary information.

11. Are any birds' nests used in winter? If so, by whom and for what purpose? Draw one of the trees and indicate the position in which the nests are placed. What trees are, as a rule, used by the birds in question?

LESSON 21

ROUND THE FARMYARD

Continue your observations of the Sparrows, as round a farmyard in winter a large number of these birds gather together in noisy crowds. They leave the fields in hard weather and come into towns and villages to secure both food and shelter.

A farmyard is at any time a capital place in which to study birds, both wild and domestic. As a rule there is a good supply of food of various kinds including grain, insects, worms, snails, slugs, mice, rats, and other creatures. The last named attract Owls, Kestrels, and Hawks. The barns and outhouses, too, invite various kinds of birds to nest or roost in them, and, as there

will probably be plenty of nesting material (such as hay, straw, and feathers) lying about (Fig. 42) and a supply of water, small wonder that the bird life of a farmyard is so varied and interesting.

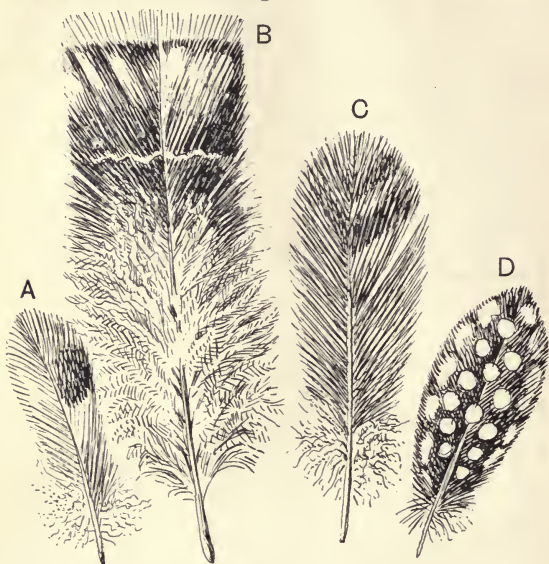


Fig. 42. Feathers dropped round Farmyard

A. Pigeon B. Turkey C. Fowl D. Guinea Fowl

As it is winter now we shall miss such familiar farmyard species as Swallows, Martins, Flycatchers, Swifts, and other summer migrants, but there are a number of other birds which haunt a farmyard more or less all day long, and which resort to the nearest

open cartshed, or stack, to secure a comfortable lodging for the night.

If there is a stackyard near at hand it will be as well to study the bird life which is continually coming and going, especially on the sunny or south side which offers a warm and inviting resting-place. A time-table might be made of the movements of the birds upon one particular stack, or a census could be prepared of all the farmyard inhabitants.

Attention need not be confined to the wild birds of the farm as the curiosity of Ducks, Geese, Fowls, Turkeys, and other animals will be aroused by your presence, and their movements may be watched to advantage.

On a cold winter day it is interesting to notice how the curiosity of domestic creatures, including cows and horses, is aroused. They stare at us, and take stock of us, as it were, without apparently gaining much satisfaction. It is so difficult for us to get at the "mind" hidden beneath the feathers or other covering. Our pet dog, for instance, understands almost every word we say to it, and responds to every gesture, every movement, but though we sometimes realise what it wants, we more often cannot translate what it wishes *us* to know, and its "language" is quite beyond us.

What are the birds thinking about?

PROBLEMS

1. Pick up any stray feathers of Fowls, Ducks, Pigeons, Turkeys, Guinea Fowl, Geese, etc. Place them in your notebook by making two slits (top and bottom) and write date, where found, and name of bird underneath.

2. Watch the movements of the birds of the farmyard and state which ones (*a*) hop ; (*b*) strut ; (*c*) walk ; (*d*) waddle ; (*e*) swim.

3. Draw a male Turkey when he is displaying his tail, wings, etc. Notice his head as he becomes excited. What happens?

4. Make a list of the wild birds seen round the farmyard and say where they are found and what they are doing thus:—

Birds seen round farmyard

Locality _____ *Date* _____

Name of Bird	Observations
Yellow Bunting	At stackyard. Feeding on grain

5. Visit the sheepfold close by and look out for three kinds of birds which are often found there. Describe each one carefully and particularly notice their movements *upon the ground*. State if you can the names of these three species and what brings them to the sheepfold.

6. Look out for a flock of mixed Finches round the farmyard. Watch the birds carefully and name the various species of which the flock consists.

7. What birds do you see upon the corn stacks in the yard and what are they doing?

8. If you know anything about Fowls name the different varieties to be seen, such as Bantams, Minorcas, Cochins, Plymouth Rocks, Houdans, etc. Sketch any conspicuous adornment they possess so as to distinguish one from another.

9. If there are any trees, shrubs, or bushes in or near the farmyard, examine the same and state if any wild or other birds of the farm are perching in them, whether high up, or low down, etc.

LESSON 22

THE WOODS IN WINTER

Though the woods in winter look cold, cheerless, and uninviting, there is a wealth of bird life to be noted. During the day the birds which resort to the wood in winter-time, or rather a large proportion of them, spend the greater part of their time foraging for food in the surrounding fields and hedgerows. The hours of daylight are now restricted—for the shortest day is on December 21st—and the birds have to make the most of their opportunities to secure food.

The **Great Tit** may be seen to-day, and you may know this bird at once if you remember that it has a pale yellow breast, with a patch of black right down the centre, which divides the breast into two parts, as it were. It has a rich black head, white cheeks, and an olive-grey back. In its best spring livery the Great Tit is really a handsome bird, and as, moreover, its habits are active, it is well worth watching. Perhaps one of these Tits may be seen hammering away with its strong beak at something which looks at a distance like a small piece of white silk, or thistle-down. So eager is the bird to continue its investigations that you can approach quite near. That it is securing food from the silky object is obvious, as every now and again it jerks its head upwards, as if gobbling up something tasty. Presently the bird sees us, and does not care to be watched, having a last feed before nightfall. It flies away uttering a note of anger. Then you may go to the spot where the bird was feeding and examine the

silky object which shows quite plainly against the leafless branch of the bush in which it finds anchorage.

If the silky strands are carefully pulled to pieces—



Fig. 43. Tree Creeper

for you will have now discovered it is not a piece of thistle-down—a few uneaten spider's eggs will be found inside. The bird had found a spider's cocoon, containing a number of round yellow eggs, and it was

upon these that it was feeding. Do not throw the ragged remains away after examination, but place them in a prominent place on a neighbouring twig in the hope that another bird will discover them.

Perhaps you will see the **Tree Creeper** to-day (Fig. 43). If you do, note its long curved beak, small round body, and short tail. Do you consider it a good climber?

If you are in a wood in the afternoon you will be able to watch the birds coming in to roost. Little companies of Finches, including Sparrows and other birds, are continually arriving and taking up their quarters for the night. Notice whether the birds all come into the wood from the same direction, or whether they make their way from north, south, east, and west.

Do they all make for the same spot and do they settle down quietly? Do certain kinds of birds roost in certain kinds of trees and shrubs? Are there any mixed companies roosting together?

Which part of the wood is the favourite roosting place? Is it exposed or sheltered?

Make a list of the various birds which you are able to distinguish in the failing light—even when it is almost dark a field-glass will enable you to make out the forms of the birds, now that the leaves are off the trees—and state which kinds are most plentiful. Can you distinguish any by the notes they utter?

PROBLEMS

1. Now that the trees and bushes are leafless is a good time for studying arboreal, or tree-loving, birds, and you should make a list of these and indicate what each one was doing, thus:—

Birds seen in _____ *wood**Date* _____

Name of bird	Observations
Tree Creeper	Climbing up bole of tree searching for insects
Green Woodpecker	Heard its loud, laughter-like notes. Difficult to see the bird
Great Tit	Feeding on spider's eggs in a cocoon

2. How many different kinds of Tits can you distinguish and by what means?

3. What woodland birds are giving voice, and are any really "in song"?

4. Have you ever heard the Tree Creeper uttering any note? If so, write it down. When ascending a tree does the Tree Creeper keep, as a rule, on the near, or the far side?

5. What is (a) the chief characteristic of tree-loving birds, and (b) how do they obtain their food?

6. There is a very small bird to be seen in the trees and high bushes, particularly in fir trees. Do you know this bird and how do you distinguish it when seen?

7. If there has been a fall of snow go to an oak tree and note any footmarks of birds to be seen there. Sketch the marks and state what birds made them, and how you know this. What were these birds doing underneath an oak tree?

8. Look carefully at the trunk of any large oak trees in the wood and ascertain if there are any hazel nuts placed in the crevices of the bark. If so (a) observe whether any of the nuts have been split open, (b) what sort of hole has been made in the shell, and (c) what bird in your opinion placed the nuts in position and feeds upon them.

9. Visit any beech trees in the wood and see if you can disturb a flock of birds from the ground. If so, watch the birds carefully, describe their movements, and say what they are and what they were doing. In addition to these larger birds there may be some small foreign Finches feeding on the fallen beech mast. State how you can distinguish them from Chaffinches.

10. Did you see a large bird in the wood which, as it flew past, showed a prominent patch of white just above the tail? What is its name, and did the bird utter any sound? If so, what was it like?

LESSON 23

FEEDING THE BIRDS

Materials required. *Bread crumbs, broken biscuits, split peas, maize, corn, or hemp seed, Barcelona nuts, pieces of fat hung up in a tree or bush, a few nesting boxes (made by members of the woodwork or carpentry class, or purchased, for details see Appendix) put up by February at latest, notebooks and pencils, tracing paper, paints. A pan or two of clean water should also be put out.*

Snow or frost, better snow and frost. A good point of observation, e.g. a classroom window with the blinds drawn down almost to the window sill.

To feed the birds in winter, more especially when there has been a severe frost or a heavy fall of snow, should be the aim of every true bird-lover.

As has already been discovered in previous Lessons, birds are likely to become on more friendly terms with human beings when they find it difficult to secure food, and advantage should be taken of this so that they may

be watched more closely, and their plumage and habits ascertained.

As a result of encouraging birds to visit my own



Fig. 44. A woodland visitor to the garden

To illustrate how tame such a shy wild bird as the Great Spotted Woodpecker may become when given protection on visiting a garden

little garden, I have had the pleasure of noting over fifty different species, and one of the latest visitors to a garden not far away from my own was such a shy woodland bird as the **Great Spotted Woodpecker**. As

an instance of how tame a wild bird may become, when it realises it is not interfered with, I may state that the specimen shown in the photograph (Fig. 44) regularly

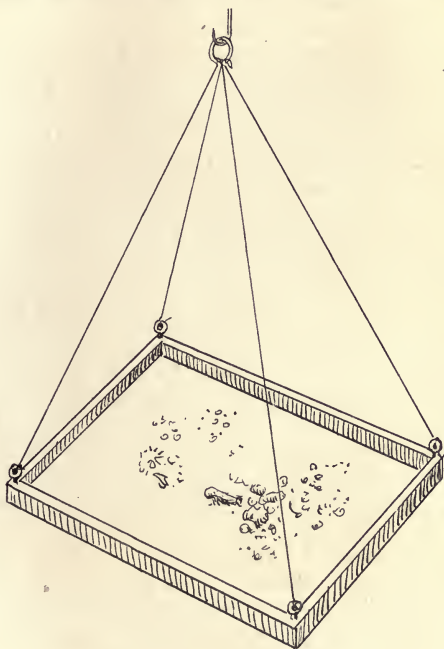


Fig. 45. A suspended bird tray

bathed in a pan of water which was placed in the garden. After a time it permitted quite a close inspection, and one day, as a small boy was watching it with

great interest, the bird actually flew on to his shoulder as the photograph illustrates.

At first the Woodpecker perched on the boy's soft felt hat, quite unknown to the boy ! The latter, realising that something had happened, turned round to see where the bird had gone, little knowing it was on his own body ! Then the Woodpecker changed its position, as shown in Fig. 44, whereupon the boy became frightened and started to cry. Few boys, or even grown-ups, have had a wild Great Spotted Woodpecker perching upon them, and I think the boy in question should congratulate himself on such an unique occurrence.

Woodpeckers must not, however, be expected to come to every garden, or school ground, but if a bird tray, or table, is put up (Fig. 45) there will be many feathered visitors, all of which will be worth watching. The tray can either be hung up, or fixed securely in the ground by means of a stout stake. Perhaps the last-named method is the best, as it prevents the tray from being blown about by the wind. The movable tray, however, can be taken down when required and cleaned. This is an advantage.

No scraps of any kind should be thrown away at this time of year. They may all be placed upon the bird tray and will find ready customers.

If nesting boxes are erected they should be placed within sight of a window where they can be easily seen. In my own garden I have several which always contain nests in the summer, and two of these are within three feet of the dining room window.

Plain nesting boxes are quite as satisfactory as the bark-covered or more ornamental ones, and they are much less expensive (see Appendix). A capital

bark-covered nesting box was made for me by a schoolboy a year or two ago, and has never failed to attract the birds, both for roosting in during cold weather and for nesting in during the summer. Blue



Fig. 46. A bark-covered nesting box

To *illustrate* a capital bird home made by a boy of fourteen. The lid is movable and the body is hewn out of the solid. It contained a brood of Blue Tits soon after being erected in a garden

and Great Tits have both used this nesting box (Fig. 46), and, as it is still in excellent condition, it is likely to be the home of several more families in the future.

PROBLEMS

1. What are the first birds to approach the food which has been placed at the far side of the playground? How long is it there before the first comers appear? Describe their manner of approach. Do they hop cautiously toward the food, or fly boldly down without showing any fear?

2. Draw an outline of a House Sparrow and fill in from actual observation the colour of the head, throat, and wings, distinguishing, if possible, male from female. State the difference, if any, between the two sexes.

3. Do any birds *walk* or *run* up to the food? If so, are they in company, or do they appear singly? Which kinds of birds show a liking for (a) bread crumbs, broken biscuits, etc., (b) split peas, maize, corn, hemp, etc., (c) pieces of fat, (d) Barcelona nuts? Which birds stay to partake of their meal *on the spot*, and which fly away to enjoy same elsewhere? Why do the latter prefer to do this?

4. Walk round the school premises and make a list of all the wild birds you can recognise and say what each one was doing, thus:—

List of Birds

observed at _____ *School on* _____

Weather _____

Name	Observations
House Sparrow	Flew down to food quickly, picked up piece of bread or biscuit and hastily retreated to a safe distance before eating same
Hedge Accentor	Noted its slow but graceful movements, and that every now and then it uttered a simple yet pleasant little song and a shrill piping note

5. Keep another list of *all* the different kinds of birds you may see during *the rest of the term*, thus :—

List of Birds

observed at _____ *School during* _____ *Term*

Date	Name	Observations

6. Instead of putting food all in one place, try, on another occasion, the experiment of repeating the crumbs, etc. in several different places, so that, even if one group of birds is disturbed, others will remain. Which birds show the least fear, how near can you get to them, and from which direction is it best to approach ?

7. Was the sun shining when you watched the birds ? If so, in what position was the sun, behind the observer or opposite ?

8. Compare the appearance of a Starling (*a*) seen against the sky, (*b*) seen on snow and in full sunshine.

9. How many different kinds of birds do you see whose general appearance is black ? How do these differ from each other in size ? Are any of them partly grey, as head, back, or wings ? Are their beaks alike ? Are there any feathers at the base of the beak ?

10. Are the Thrushes all alike ? Or do you recognise any differences, e.g. in size ? Are any darker than the others, or with differently speckled breasts, or with red or grey marks ?

11. In snowtime. Scatter crumbs outside the classroom window. Write a list of all the birds that come. Are there any you have not seen before, as Redwing or Snow Bunting ? If so, describe them. Do any birds come closer than you have generally seen them before ? Report thus :—

*Bird studies in Winter**Birds seen on the snow**Date* _____

Name	Observations
Redwing	This bird is like a Thrush but rather smaller, and has a red patch just under its wing, and on the flanks. It also has a stripe over the eye

12. Note the first date any birds are seen inspecting the nesting boxes. Watch their movements carefully and give an account of exactly what happens. Observe and note when the first nesting material is brought. Inspect the boxes at dusk to ascertain if any birds use them for roosting in.

13. Cut a coconut in two and hang up the halves. What birds come to it?

14. Hang up some fat bacon. Do any birds show a special liking for this?

LESSON 24

AT THE MUSEUM

It is possible that your teacher or the curator of the museum may be able to go round with you and explain things. But even without this help there is a great deal you can learn for yourself. Try to notice little points which are easy to see indoors, and which if once learnt help in recognising birds out of doors. It is not all boys who are able to get to the Natural History Museum at South Kensington, but the questions that follow can

be answered in several provincial museums. For instance, most of the questions can be answered in the museum at York, some from the stuffed birds, others from the collection of birds' skins; and almost all the questions can be answered in the Hancock Museum at Newcastle-on-Tyne, and at museums in other towns such as Brighton, Edinburgh, Glasgow, Liverpool, Norwich, Nottingham, and elsewhere.

During part of your visit there may be explanations to hear, needing close attention. For the rest of your lesson, though there may not be any risk of frightening the birds in the museum, you may continue to talk in the same quiet undertone. It is enough if your nearest neighbour can just hear every word distinctly; there should be the same standard as for talking in the wood. If you shout in the wood the birds are frightened; to shout in a museum would frighten away the other visitors.

You may find it wise to walk all round the museum once in order to learn what there is to be seen; but most of your time will be best spent in working quietly and patiently through some chosen part of the exhibits with a very definite object in view. There will always remain other things worth seeing, and you will leave the museum looking forward to another visit. For a first visit your attention may be concentrated on some special groups of birds and in making some interesting comparisons described in the *Problems*.

If, as is hoped, the specimens are well stuffed and mounted—and the last few years has seen a great improvement in this direction by the setting up of what are known as life-groups (see those in the Grosvenor Museum, Chester, at South Kensington, Brighton, and

elsewhere)—a visit to a museum is a splendid opportunity of making sketches of birds which it has been found difficult to obtain out-of-doors.

During one visit the whole lesson might be devoted to the sizes, shapes, forms, and colours of birds' *beaks*. Sketches should be made of typical and representative beaks of each family of birds, thus, Hawk, Owl, Wader, Warbler, Finch, Woodpecker, etc. (Fig. 47).



Fig. 47. Head and foot of Tawny Owl

Another lesson might be arranged on the subject of birds' *legs and feet*, and still another on their *wings and tails*. Their *skeletons* also might be studied.

Unfortunately wrong glass eyes are often used in stuffed birds, so you must be warned to be careful on

this point. A note may be made against your sketch of the kind of eye the stuffed bird possessed. This should be compared with a description of the live eye in a reliable book on birds (see Appendix); so, too, with the colour of the beak, legs, and feet, for these are frequently misleading in mounted specimens. The curator or your teacher should help you in this direction.

Most museum curators are very glad to give any help they can either in answering questions or naming specimens brought by young naturalists to the museum. Whilst then it is at all times preferable to study birds *out-of-doors* an occasional visit to a good museum is an advantage, and points may be noted there which are difficult to observe in the field. In any case the mounted bird specimens—or the skins—are not to be regarded as so many corpses, but each one should in some way or other provide something of interest, it being borne in mind always that the specimen under examination was once living, and as such even its preserved remains should speak to those who are really desirous of obtaining accurate knowledge of our wild birds.

PROBLEMS

1. Make a complete list of all the British Finches, or Owls, or Warblers, or Ducks, or Woodpeckers, or other group of birds proposed by your teacher. Which of these can you recognise out of doors? How? Say exactly how each bird is distinguished from others similar to it, thus:—

*List of Finches in museum at*_____

*Date of visit*_____

Name	How distinguished
Greenfinch	A yellow-green colour with a prominent yellow bar on its wing and on each side of its tail. Strong, massive beak
Bullfinch	Male has black head, rosy-pink breast, grey back, white rump, black tail. Female has dark head, otherwise brown and a white rump

2. Draw the beak and foot of at least four of the following: (a) Duck; (b) Thrush; (c) Woodpecker; (d) Redshank; (e) Seagull; (f) Nightjar; (g) Kestrel; (h) Owl.

3. Compare a Cuckoo with a Sparrow Hawk. Is there any similarity? How would you be able to distinguish one from the other irrespective of the size, shape, and plumage? Could either of these birds be confused with the Nightjar?

4. Which are the smallest and largest British birds?

5. Find a Snipe or Woodcock. Note the long beak, so useful for probing for food, and also the position occupied by the eye. Sketch the head and beak of one of these birds, indicating where the eye is situate.

6. Compare a Nightingale with a Robin and remark whether, without the red breast of latter, there is any similarity in size, plumage, and general appearance.

7. Examine a Hawfinch and a Chaffinch to notice difference in build and especially in the beak. Sketch the head and beak of both species.

8. Note a Coal Tit, Marsh Tit, Blackcap (male), and Reed Bunting (male), all birds with black heads, and make notes so that you may distinguish one from the other when observing the living specimen.

9. Closely examine a House Martin, Sand Martin, and Swallow. Describe the chief features of each which will enable you to distinguish them next spring.

10. Look at the Seagulls. How can you distinguish (a) Lesser Black Backed Gull from Herring Gull? (b) an immature Gull from an old one of the same species? (c) Kittiwake from Common Gull? (d) which Gull has a different head from all the others?

11. Look at the Waders. (a) In what respects are they all alike? (b) how do they all differ from the Seagulls? (c) how can you distinguish Redshank, Common Sandpiper, Woodcock, Common Snipe, Golden Plover?

12. Distinguish between: (a) Rock Dove, Stock Dove, Ring Dove; (b) Coot, Waterhen, Little Grebe; (c) Stonechat, Wheatear, Whinchat; (d) Pied Wagtail, Grey Wagtail, Yellow Wagtail; (e) Blue Tit, Marsh Tit, Coal Tit; (f) Chaffinch, Bullfinch, Brambling; (g) Twite, Linnet, Lesser Redpoll; (h) Rook, Carrion Crow, Jackdaw.

13. Willow Wren, Chiff Chaff, Wood Wren. In what respects are these birds alike? Compare their nests. Compare their eggs. How do you propose to recognise the birds out of doors?

14. Look at the egg collection. Can you distinguish between the eggs of: (a) House Sparrow and Tree Sparrow? (b) Peewit, Redshank, Golden Plover? (c) Chaffinch, Tree Pipit, Reed Bunting, Blackcap, Garden Warbler, Whitethroat?

15. Examine and sketch the following eggs: the egg of a bird which is laid in a nest above ground (Song Thrush); the egg of a bird which is laid on the ground (Ringed Plover); the egg of a bird which is laid in a hole in a tree (Woodpecker); the eggs of the Cuckoo and Sparrow Hawk (natural size).

16. Why is the egg of the Cuckoo so much smaller than that of the Sparrow Hawk?

17. As well as observing the birds themselves, notice also the eggs of the Golderest and Mute Swan, and draw same *natural size*.

18. Compare the eggs of the Blackbird and Ring Ouzel, and note any points which will in future enable you to distinguish one from the other.

19. There are several eggs which are white with pink spots. The Wren's is one of these. Find the others and say how they differ from each other.

20. Are the Tree Pipits' eggs all alike? What other eggs do they resemble? Shall you always be able to distinguish them?

21. Write a list of birds which lay pure white eggs. How can these eggs be distinguished in (a) size; (b) shape? Can you distinguish them in any other way?

22. There are some other eggs like those of the Greenfinch in having pink spots on a pale green ground. Write a list of these. Can they be distinguished?

23. Look through the Guillemots' eggs. Select any six of them. Try to describe their colouring in words. How does a Razorbill's egg differ from a Guillemot's (a) in size; (b) in shape; (c) in colour?

24. If the eggs are accessible and can be handled, measure the length and breadth of a Guillemot's egg. Can you measure the length exactly just with a straight ruler? Would callipers be better? How can you manage if you have no callipers? Measure the lengths of all the Guillemots' eggs in the collection each to the nearest millimetre. Tabulate the answers.

25. Are there any nests in the Museum? If so can you distinguish between those of: (a) Blackbird, Thrush, Ring Ouzel? (b) Wren, Willow Wren, Longtailed Tit? (c) Whitethroat, Blackcap, Garden Warbler? (d) Greenfinch, Chaffinch, Bullfinch?

26. Practise drawing ovals—like Hen's eggs—until you can complete a good curve with a single stroke of the pencil and without the use of indiarubber.

27. Draw a Hen's egg and paint with ink and water so that the shadows shall show the curved surface.

28. Colour any other drawings of eggs you have done. Compare your results with the plates of eggs in any books mentioned in Appendix VII.

APPENDIX I

NOTES ON THE CLASSIFICATION OF BIRDS

Birds receive a generic or surname, also a specific or Christian name, thus the Mistle Thrush is known in Latin as *Turdus viscivorus* just as man belongs to the Genus *Homo*—*Homo sapiens*, the wise man. *Turdus* is the generic or surname of the Mistle Thrush, *viscivorus* is the specific or Christian name. *Turdus*=a Thrush, in classical Latin; *viscivorus*, from *viscum*=mistletoe, and *voro*=I devour. It belongs to the Genus *Turdus* which includes nearly all the British Thrushes, the Rock Thrush alone being placed in a separate Genus—*Monticola*. Further, the Genus *Turdus* is a Sub-family (*Turdinae*) of the Family *Turdidae*, and this Family of birds, with others, belongs to the large Order *Passeres*.

In a brief Appendix it is not possible to give a detailed account of all these Orders, Sub-Orders, Families, Sub-Families, and Genera, but a concise record of the various birds belonging to each Order may be stated. The classification followed is that of the British Ornithologists' Union, and for further details the reader is referred to their list. (See Bibliography, Appendix VII.)

1. *Order Passeres* contains the Thrushes, Wheatears, Whin-chats, Stonechats, Redstarts, Bluethroats, Redbreast, Nightingale, Whitethroats, Warblers, Goldcrest, Firecrest, Accentors, Dippers, Titmice, Nuthatch, Wrens, Wagtails, Pipits, Oriole, Shrikes, Wax-wing, Flycatchers, Swallows and Martins, Tree Creeper, Finches, Crossbills, Buntings, the Crow tribe and the Larks.

2. *Order Picariae* contains the Swifts, Nightjars, Woodpeckers, Kingfishers, Roller, Bee Eater, Hoopoe and Cuckoos.

3. *Order Striges* contains the Owls.

4. *Order Accipitres* contains the Vultures, Harriers, Buzzards, Eagles, Hawks, Kites, Falcons and Osprey.

5. *Order Steganopodes* contains the Cormorant, Shag and Gannet.

6. *Order Herodiones* contains the Herons, Bitterns, Storks, Spoonbill, Ibis and Flamingo.

7. *Order Anseres* contains the Geese, Swans, and a host of Ducks, Scoters and Mergansers.

8. *Order Columbæ* contains the Doves.
9. *Order Pterocletes* contains one solitary British species, Pallas's Sand Grouse.
10. *Order Gallinæ* contains the Pheasant, Partridges, Quail and Grouse.
11. *Order Hemipodii* contains the Andalusian Hemipode of which only about three examples have been obtained in England.
12. *Order Fulicariæ* contains the Rails, Crakes, Moorhen and Coot.
13. *Order Alektorides* contains the Cranes and Bustards.
14. *Order Limicolæ* contains the Stone Curlew, Pratincoles, Courser, Plovers, Turnstone, Oystercatcher, Avocet, Stilt, Phalaropes, Woodcock, Snipe, Sandpipers, Dunlin, Stints, Knot, Ruff, Sanderling, Greenshank, Redshank, and Yellowshank, Godwits and Curlews.
15. *Order Gaviæ* contains the Terns and Gulls (including the Skuas).
16. *Order Tubinares* contains the Petrels and Shearwaters.
17. *Order Pygopodes* contains the Divers, Albatross, Grebes, Auks, Guillemots and Puffin.

Thus on this basis of classification the Mistle Thrush is the first species on the list and the Puffin is the last. The birds included above are set out by the B.O.U. Committee in the order given. Seebohm reckoned 222 *species* as, correctly speaking, *British Birds*.

APPENDIX II

A LIST OF BRITISH SONG BIRDS

NOTE.—Birds like the Chiff Chaff, Tits, and others are not included, as, although they “sing,” they cannot correctly be called *Song birds*. This will account also for the exclusion of any other species that may not be noted. On the other hand a few are perhaps included which ought not to be.

- | | |
|-------------------|-------------------|
| 1. Blackbird. | 4. Bunting, Reed. |
| 2. Blackcap. | 5. „ Snow. |
| 3. Bunting, Corn. | 6. „ Yellow. |

- | | |
|---------------------|--------------------------|
| 7. Chaffinch. | 25. Mistle Thrush. |
| 8. Dipper. | 26. Song Thrush. |
| 9. Goldfinch. | 27. Twite. |
| 10. Greenfinch. | 28. Grey Wagtail. |
| 11. Linnet. | 29. Dartford Warbler. |
| 12. Nightingale. | 30. Garden Warbler. |
| 13. Ring Ouzel. | 31. Grasshopper Warbler. |
| 14. Meadow Pipit. | 32. Marsh Warbler. |
| 15. Rock Pipit. | 33. Reed Warbler. |
| 16. Tree Pipit. | 34. Sedge Warbler. |
| 17. Redbreast. | 35. Willow Warbler. |
| 18. Lesser Redpoll. | 36. Wood Warbler. |
| 19. Redstart. | 37. Wheatear. |
| 20. Siskin. | 38. Whinchat. |
| 21. Skylark. | 39. Greater Whitethroat. |
| 22. Hedge Accentor | 40. Lesser Whitethroat. |
| (Sparrow). | 41. Woodlark. |
| 23. Stonechat. | 42. Brown Wren. |
| 24. Swallow. | 43. Golden Crested Wren. |

APPENDIX III

A LIST OF REGULAR SPRING AND SUMMER
MIGRANTS TO BRITAIN

<i>Species</i>	<i>Approximate date of arrival</i>
1. Blackcap	April 15.
2. Chiff Chaff	March 20.
3. Corncrake	End of April.
4. Spotted Crake	March.
5. Cuckoo	April 15.
6. Stone Curlew	End of March or early April.
7. Turtle Dove	April 25.
8. Hobby Falcon	April.
9. Pied Flycatcher	First week in May.
10. Spotted Flycatcher	April 25.
11. House Martin	April 20.

	<i>Species</i>	<i>Approximate date of arrival</i>
12.	Sand Martin	April 20.
13.	Nightingale	April 15.
14.	Nightjar	First or second week in May.
15.	Ring Ouzel	Late in March or early April.
16.	Tree Pipit	April 7—10.
17.	Kentish Plover	End of April or in May.
18.	Quail	May 20.
19.	Redstart	April 25.
20.	Common Sandpiper	April 20.
21.	Red Backed Shrike	April 25.
22.	Swallow	April 10.
23.	Swift	May 1.
24.	Yellow Wagtail	Late in March.
25.	Garden Warbler	April 25.
26.	Grasshopper Warbler	May 1.
27.	Marsh Warbler	May 15.
28.	Reed Warbler	Late in April or early in May.
29.	Sedge Warbler	April 25.
30.	Willow Warbler	April 5.
31.	Wood Warbler	May 1.
32.	Wheatear	During March.
33.	Whinchat	April 30.
34.	Greater Whitethroat	April 20.
35.	Lesser Whitethroat	April 20.
36.	Wryneck	End of March or early April.

NOTE.—Several other species, such as the Golden Oriole and Hoopoe, frequently, if not regularly, come to Britain in spring, and many birds which were noted when they went south in autumn return north soon after the turn of the year. None of these are included in the above list as it only pretends to be a record of spring and summer migrants *which nest with us* and which leave us again in the autumn to pass the winter in a warmer country. As a rule, Africa is the Mecca of nearly all the species listed above.

NOTES ON AUTUMN AND WINTER MIGRANTS

It is difficult to give anything like an accurate list of these birds as the state of the weather and the nature of the district so largely control their movements. A few *regular* autumn and winter

migrants which may be mentioned are the following species:—Brambling, Snow Bunting, Crossbill, Ducks, Fieldfare, Geese, Golden Plover, Redwing, Black Redstart, Siskin, Snipe, Swan, Woodcock, and a large number of Seabirds, and Wild Fowl. In hard weather many rare and uncommon visitors may be expected, for seabirds (especially immature specimens) will find their way (or be blown by adverse winds) inland, whilst many of our indigenous birds shift their quarters, though some members of the species are found with us all the year through.

It is much more difficult to correctly follow the movements of autumn and winter migrants than of those forty odd species which visit us during spring and summer as the winter visitors are not song birds, except in a few instances, and even if they were, they would not be likely to sing at such a time. Thus autumn and winter migrants *must* be *seen*. The sportsman naturalist probably has the best chance of success in this direction, but there is no reason why the field ornithologist, if in a favourable locality, should not devote attention to this somewhat neglected branch of bird study. See Lesson 13.

APPENDIX IV

GLOSSARY OF TECHNICAL TERMS

- Axillaries**—The inner feathers under the wing or armpit.
Cere—The soft skin which covers the base of the upper mandible.
Culmen—The median lengthwise ridge of the upper mandible.
Dorsal—Of, or pertaining to, the back.
Flanks—The borders of the lower breast.
Iris—The coloured circle round the pupil of the eye.
Lores—The space between the eye and the beak.
Mandibles—The upper and lower halves of the beak.
Metatarsus—That portion of the foot which reaches from the ankle-joint to the base of the toes.
Moustaches—Feathers on head which give the bird a moustache-like adornment.
Nape—The back upper part of the neck.

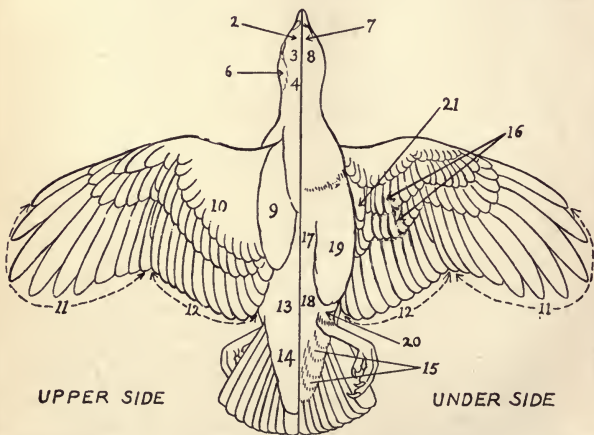
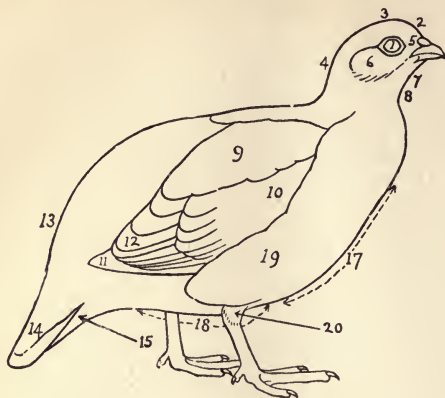


Diagram of Parts of a Bird (Common Partridge)
 Reproduced from *A Ready Guide to British Birds*, by B. A. Carter,
 by permission of Messrs Sidgwick & Jackson, Ltd.

Occiput—The hinder part of the head.

Orbit—The bony cavity in which the eyeball rests.

Primaries—The large quill feathers of the wing.

Rectrices—The tail-feathers.

Scapulars—The shoulder-feathers between the wing and back.

Secondaries—The feathers of the wing which succeed the primaries near the wrist-joint.

Shank—That portion of the leg between the ankle and thigh.

Speculum—The patch of bright feathers on the secondaries.

Striated—Streaked with parallel lines.

Tarsus—That portion of the leg between the ankle and toes.

Transverse—In a cross direction.

Under tail-coverts—The feathers on the under side of the tail.

Upper tail-coverts—The feathers on the upper side of the base of the back.

Ventral—Belonging to the belly.

Vermiculated—Feathers inlaid with a worm-like pattern.

Wing-coverts—The feathers on the shoulder of the wing.

(From *British Nesting Birds* by permission of Messrs J. M. Dent & Sons, Ltd.)

Explanation of Diagram opposite

- | | |
|------------------------|------------------------|
| 1 Irides. | 12 Secondaries. |
| 2 Forehead. | 13 Rump. |
| 3 Crown. | 14 Upper tail-coverts. |
| 4 Nape. | 15 Under tail-coverts. |
| 5 Lores. | 16 Under wing-coverts. |
| 6 Ear-coverts. | 17 Breast. |
| 7 Chin. | 18 Belly. |
| 8 Throat. | 19 Flanks. |
| 9 Scapulars. | 20 Thighs. |
| 10 Upper wing-coverts. | 21 Axillaries. |
| 11 Primaries. | |

APPENDIX V

SIGNALLING WHEN BIRD WATCHING

All *shouting* should be avoided. *Whistle signals* may be used *quietly*, but *silent hand signals* are to be preferred. Some capital signals are given on page 160 of *Scouting for Boys* from which the following are quoted :—

Whistle Signals

Whistle Signals are these: One long blast means "Silence," "Alert," "Look out for my next signal."

1. A succession of long, slow blasts means "Go out," "Get further away," or "Advance," "Extend," "Scatter."

2. A succession of short, sharp blasts means "Rally," "Close in," "Come together," "Fall in."

3. A succession of short and long blasts alternately means "Alarm," "Look out," "Be ready," "Man your alarm posts."

Hand Signals

Hand waved several times across the face*from side to side, or flag waved horizontally from side to side opposite the face, means "No," "Never mind," "As you were."

Hand or flag held high, and waved very slowly from side to side at full extent of arm, or whistle a succession of slow blasts, means "Extend," "Go further out," "Scatter."

Hand or flag held high and waved quickly from side to side at full extent of arm, or whistle a succession of short, quick blasts, means "Close in," "Rally," "Come here."

Hand or flag pointing in any direction means "Go in that direction."

Hand or flag jumped rapidly up and down several times means "Run."

Hand or flag held straight up over head means "Stop," "Halt."

Whispering Tests

The success of your work in the open air will depend very much on your being able to communicate with each other without loud talking which would frighten the birds. Learn indoors how to spell the following words. They will then be dictated by your teacher in

a different order and in a whispered voice so that you can hear some but not all of them. If five words are whispered from each side of the room in turn everybody will have about the same chance of hearing.

Sparrow.	Fieldfare.	Robin.	Greenfinch.
Blackbird.	Chaffinch.	Longtailed Tit.	Creeper.
Accentor.	Song Thrush.	Chiff Chaff.	Gold Crest.
Blue Tit.	Bullfinch.	Whitethroat.	Yellow Hammer.
Linnet.	Great Tit.	Magpie.	Willow Wren.

Count the number of words (a) heard correctly, (b) spelt correctly.

Out of doors and arranged in pairs. Find at what distance you and your companion can just hear each other whispering. Measure this distance in paces. Now you know how close you must keep if you are to talk without frightening the birds.

Dot and Dash Alphabet

You should also be ready to understand and be understood when too far off to make a whisper heard. For instance you can invent a few signs of your own, a lifted finger to mean "come at once," or a lifted hand to mean "don't come." The deaf and dumb alphabet can hardly be used at a distance, but you might learn some of the commoner letters of the Morse signalling alphabet, also called the dot and dash alphabet, used for wireless telegraphy:

•	e	• • •	s
—	t	— — —	o
• •	i	• —	a
— —	m	— •	n

Now write out all the words you can, using just these eight letters. Thus Tomtit:

— — — — — — • • —
Try "it is tea time." When you know these learn:

• — —	w	— • •	d
— • —	k	• — •	r
— — •	g	• • —	u

and write down all the names of birds which you can, using the fourteen letters you now know. Thus Kite:

— • — • • — •

Eyesight Tests

Test I.—Cards with printed letters on will be hung up, and you will have an opportunity of trying to read them at different distances. Copy as many letters as you can read.

Test II.—Pictures of birds or stuffed birds will be shown. Write down the names of the birds.

Your success in outdoor work will depend partly—not altogether—on your keenness of eyesight and hearing.

APPENDIX VI

**LIST OF SOCIETIES PROMOTING THE STUDY AND
PROTECTION OF BIRDS, ETC.**

Aberdeen University Bird Migration Inquiry, The University, Aberdeen.

British Ornithologists' Union, c/o The Zoological Society of London, Regent's Park, London, N.W.

Committee for the Economic Preservation of Birds, 42 Bloomsbury Square, London, W.C.

Commons and Footpaths Preservation Society, 25 Victoria Street, Westminster, S.W.

Linnean Society of London, Burlington House, London, W.

National Trust for Places of Historic Interest or Natural Beauty, 25 Victoria Street, Westminster, S.W.

Nature Photographic Society, Woodlesford, Leeds.

Royal Photographic Society of Great Britain, 66 Russell Square, London, W.C.

Royal Society for the Prevention of Cruelty to Animals, 105 Jermyn Street, London, S.W.

Royal Society for the Protection of Birds, 23 Queen Anne's Gate, London, S.W. (This Society holds a Public School Essay Competition, particulars of which may be obtained from the Secretary at above address.)

Royal Society of Edinburgh, Edinburgh.

Royal Society of London, Burlington House, London, W.

Royal Zoological Society of Ireland, Phoenix Park, Dublin.

- School Nature Study Union (Gen. Sec. Mr H. E. Turner, 1 Grosvenor Park, Camberwell, London, S.E.).
 Scottish Natural History Society, Edinburgh.
 Selborne Society, 42 Bloomsbury Square, London, W.C.
 Société Nationale d'Acclimatation de France, 33 Rue de Buffon, Paris.
 Society for the Promotion of Nature Reserves, Natural History Museum, Cromwell Road, London, S.W.
 Yorkshire Naturalists' Union (Sec. T. W. Woodhead, F.L.S., Technical College, Huddersfield).
 Young Naturalists' League, 8 Southampton Street, London, W.C.
 Zoological Photo Club, Springfield, Brigg, Lincs.
 Zoological Society of London, Regent's Park, London, N.W.

NOTE.—The large number of Field Clubs, Local Natural History and Scientific Societies and Museums are *not* included in the above list. A list of these "Affiliated Societies" will be found in the British Association address list of members, printed annually.

APPENDIX VII

BOOKS, JOURNALS, MAGAZINES, REPORTS, ETC.

BOOKS

- H. G. ADAMS, *Nests and Eggs of Familiar Birds*. 5s. net. §
 F. G. AFLALO, **A Sketch of the Natural History (Vertebrates) of the British Isles*. 6s. net. Blackwood.
 B. BEETHAM, **Photography for Bird Lovers*. 5s. net. Witherby.
 J. L. BONHOTE, *Birds of Britain*. 7s. 6d. net. Black.
 J. M. BORASTON, *British Birds and their Eggs*. 6s. Chambers.
 BRITISH ORNITH. UNION, **A List of British Birds*. 8s. 6d. Wesley.
 A. M. BROWNE, **Practical Taxidermy*. 7s. 6d. Upcott Gill.
 F. T. BUCKLAND, **Curiosities of Natural History*. 4 vols. 2s. 6d. each. Macmillan.
 A. G. BUTLER, *British Birds with their Nests and Eggs*. 6 vols. £4. 4s. 0d. Brumby and Clarke.
 B. A. CARTER, *The Ready Guide to British Birds*. 2s. 6d. net and 1s. 6d. net. Sidgwick and Jackson.
 W. E. CLARKE, **Studies in Bird Migration*. 18s. net. Gurney and Jackson.

- T. A. COWARD, *The Migration of Birds*. 1s. net (Cambridge Manuals). Cambridge University Press.
- C. DIXON, *Bird Life of London*. 6s. Heinemann.
- *Open Air Studies in Bird Life*. 7s. 6d. net. Griffin.
- *Our Favourite Song Birds*. 7s. 6d. net. Lawrence and Bullen.
- *The Game Birds and Wild Fowl of the British Isles*. £3. 3s. 0d. net. Pawson and Brailsford.
- J. DUNCAN, *Birds of the British Isles*. 5s. net. Walter Scott.
- A. H. EVANS, **Birds* (Cambridge Natural History). 17s. net. Cambridge University Press.
- F. FINN, *Birds of the Countryside*. 5s. Hutchinson.
- C. H. FISHER, *Reminiscences of a Falconer*. 3s. 6d.
- W. W. FOWLER, **A Year with the Birds*. 3s. 6d. Macmillan.
- *Tales of the Birds*. 3s. 6d. Macmillan.
- W. FURNEAUX, *The Outdoor World*. 3s. 6d. net. Longman.
- W. J. GORDON, *Our Country's Birds*. 3s. 6d. Simpkin.
- W. R. O. GRANT, *A List of British Birds*. 1s. 6d. Witherby.
- W. T. GREENE, **British Birds for Cages and Aviaries*. 3s. 6d. Upcott Gill.
- *Diseases of Cage Birds*. 1s. Upcott Gill.
- E. HARTERT and others, *A Hand List of British Birds*. 7s. 6d. net. Witherby.
- J. E. HARTING, *Catalogue of Books, Ancient and Modern, relating to Falconry, with Notes, Glossary, etc.* £1. 1s. 0d. net. Quaritch.
- *Recreations of a Naturalist*. 4s. Unwin.
- F. W. HEADLEY, **The Flight of Birds*. 3s. 6d. Witherby.
- O. HERMANN, **Birds Useful and Harmful*. 6s. net. Sherratt and Hughes.
- M. HIESEMANN, **How to Attract and Protect Wild Birds*. 1s. 6d. Witherby.
- H. K. HORSFIELD, *English Bird Life*. 7s. 6d. net. Everett.
- HON. R. HUBBARD, **Ornamental Waterfowl*. 6s. Simpkin.
- W. H. HUDSON, **British Birds*. 3s. 6d. net. Longman.
- R. JEFFERIES, **The Gamekeeper at Home*. 10s. 6d. Duckworth.
- C. A. JOHNS, **British Birds in their Haunts*. 7s. 6d. net. Routledge.
- R. KEARTON, *Wild Life at Home*. 6s. Cassell.
- *British Birds Nests*. 14s. net. Cassell.

- J. E. H. KELSO, *Notes on Some Common and Rare British Birds*. 15s. net. Century Press.
- F. B. KIRKMAN (Ed.), *The British Bird Book*. 4 vols. £6. 6s. Jack.
- J. LEA, *The Romance of Bird Life*. 5s. Seeley.
- R. LYDEKKER, *The Sportsman's British Bird Book*. 30s. net.
- J. R. B. MASEFIELD, *Wild Bird Protection and Nesting Boxes*. 5s.
- F. O. MORRIS, *A History of British Birds*. 6 vols. £3. 10s. 0d. Grant.
- R. NEWSTEAD, **The Food of some British Birds*. 4d. post free. Board of Agriculture.
- A. NEWTON, **A Dictionary of Birds*. 21s. net. § Black.
- J. A. OWEN, *Birds in their Seasons*. 2s. 6d. Routledge.
- C. J. PATTEN, **The Aquatic Birds of Great Britain and Ireland*. 25s.
- W. P. PYCRAFT, *A History of Birds*. 10s. 6d. net. Methuen.
- H. SAUNDERS, **An Illustrated Manual of British Birds*. 21s. net. Gurney and Jackson.
- H. SEEBOHM, *History of British Birds*. §
- R. B. SMITH, *Bird Life and Bird Lore*. 2s. 6d. net. Murray.
- H. K. SWANN, **A Dictionary of English and Folk names of British Birds*. 10s. net. Witherby.
- W. SWAYSLAND, *Familiar Wild Birds*. 4 vols. 3s. 6d. each. Cassell.
- A. L. THOMSON, **Britain's Birds and their Nests*. 21s. net. Chambers.
- R. J. USSHER and WARREN, **Birds of Ireland*. 30s. Gurney and Jackson.
- C. WATERTON, *Essays on Natural History*. § Warne.
- W. P. WESTELL, *Bird Life of the Seasons*. 1s. 6d. net. Black.
- **Boy's Own Nature Book*. 3s. 6d. R.T.S.
- *British Nesting Birds*. 1s. net. Dent.
- **The Young Naturalist*. 6s. net. Methuen.
- *The Young Ornithologist*. 5s. net. Methuen.
- *Wonders of Bird Life*. 1s. net. Milner.
- GILBERT WHITE, **Natural History of Selborne*. 1s. Dent.
- W. YARRELL, **A History of British Birds*. £4. § Gurney and Jackson.

§ NOTE.—Several of the above books may be purchased through a Secondhand Bookseller at a cheaper price than stated.

* Those books which bear an asterisk are recommended as a nucleus for a School Natural History Library. For foreign, general

local, and many other works on Birds refer to catalogues issued by J. Wheldon and Co., 38 Great Queen Street, Kingsway, London, W.C.; Wm. Wesley and Son, 28 Essex Street, Strand, London, W.C.; F. Edwards, 83 High Street, Marylebone, London, W., and other Booksellers.

JOURNALS, MAGAZINES, REPORTS, ETC.

- Animal World* (Organ of the R.S.P.C.A.). Monthly, 2d. 105 Jermyn St., S.W.
- Animal's Friend*. Monthly, 2d. York House, Portugal St., W.C.
- Auk* (Quarterly Organ of the American Orn. Union). 12s. 6d. per annum. Gurney and Jackson, Paternoster Row, E.C.
- Avicultural Magazine* (Journal of the Avicultural Society). Monthly, 1s.
- Bazaar*. Tri-Weekly, 2d. Drury Lane, W.C.
- Bird Lore* (Illustrated Organ of the Audubon Societies of U.S.A.). Bi-Monthly.
- Bird Notes and News* (Organ of the Royal Society for the Protection of Birds, 23 Queen Anne's Gate, S.W.). Issued four times a year, 1s. per annum, post free.
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APPENDIX IX.

SUMMARY OF THE WILD BIRDS PROTECTION ACTS, 1880 to 1904

Compiled for the Society by Frank E. Lemon, of Lincoln's Inn, Barrister-at-Law, and reprinted by leave of the Hon. Sec. of the Royal Society for the Protection of Birds, 23 Queen Anne's Gate, S.W., who will send fuller information on receipt of a few stamps.

Wild Birds Protection (Principal) Act, 1880 (43 & 44, Vict. c. 35).

- (1) Shooting or snaring all wild birds during a particular period (CLOSE TIME) is prohibited, and in the case of certain wild birds, named in the SCHEDULE, special and fuller protection is granted.
- (2) Offering for sale, after March 15th, any wild bird recently killed or taken is prohibited.
- (3) Provision is made for the extension or variation of the close time.

Wild Birds Protection Act, 1881 (44 & 45, Vict. c. 51).

- (1) Amends the law as to the offering for sale in respect of wild birds killed abroad.
- (2) Adds the Lark to the Schedule.

Wild Birds Protection Act, 1894 (57 & 58, Vict. c. 24).

- (1) Enables orders to be made, on the application of County Councils, to prohibit the taking or destroying of the EGGS of certain wild birds, and of the eggs of any wild bird in particular breeding areas.

- (2) Enables orders to be made to add further species of wild birds to the Schedule.

Wild Birds Protection Act, 1896 (59 & 60, Vict. c. 56).

- (1) Enables orders to be made to prohibit the taking or killing of any wild bird beyond the breeding period (or close time), and orders prohibiting the taking, etc., of all wild birds, in particular places, during the period to which the Act of 1880 does not extend.
- (2) Enables application to be made by the Council of a County Borough to prohibit the taking of eggs, and to add birds to the Schedule.
- (3) Gives power to forfeit traps, nets, snares, decoy birds, etc., on conviction, in addition to any penalty, under any of these Acts.

Wild Birds Protection Act, 1902 (2 Edw. VII. c. 6).

Gives power to the Court to forfeit any bird or wild bird's egg in respect of which an offence has been committed in addition to any penalty.

Wild Birds Protection Act, 1904 (4 Edw. VII. c. 4).

Prohibits the use of the pole-trap.

These six Acts are to be read as one, and may be quoted as the Wild Birds Protection Acts, 1880–1904.

By the Wild Birds Protection Acts (subject to the variations made by "Orders" for certain districts), the **shooting or snaring of all wild birds is prohibited from March 1st to August 1st**, whether contained in the special list given in the Schedule to the Act of 1880 or not.

An owner or occupier of land, or a person authorised by him, is, however, not so prohibited, except in the case of the birds included in the Schedule as drawn or as amended for certain districts. The object of adding a bird to the Schedule is not only the bird is then protected against the owner of the property and his agent, but the penalty which can be inflicted is greater, viz.:—£1 for each bird and costs. The penalty in the case of Non-Scheduled Birds is limited to 5s. each bird and costs. In each case the bird may be forfeited. The penalty for taking eggs when forbidden is £1 for each egg and costs, and the egg may be forfeited. The list of Scheduled Birds is given in the Act of 1880.

To possess or expose for sale after March 15th a wild bird recently killed or taken is an offence. To refuse name and address, or to give false name and address, is also an offence. The Court may forfeit nets, traps, snares, and decoy birds; also birds and eggs illegally taken.

The Secretaries of State may grant, on the application of the Councils of Counties or County Boroughs, Orders of the following nature:—

- (1) The extension or alteration of the statutory close time.
- (2) The addition of birds to the Schedule of the Act 1880.
- (3) The protection of the eggs of certain birds in the whole County or County Borough, or a specified area therein.
- (4) The special reservation of any part of a County or Borough as a breeding area, prohibiting therein the taking of the eggs of all wild birds.
- (5) A further period for the protection of particular kinds of birds which may in effect secure for them protection during the whole year.
- (6) An Order prohibiting the taking or killing of birds on Sundays in certain districts.

APPENDIX X

USE OF THE COUNTRY

By permission of Messrs Macmillan from "An Introduction to Practical Geography," by A. T. Simmons and Hugh Richardson.—pp. 376, 377.

The use of the country must also be learnt—especially by boys and girls from town schools. Town pupils must remember many things about which farmers are sensitive. For instance, fences are often left unrepaired during the winter, and this practice fits in well with the winter pastimes of hunting and paper-chasing. The farmer makes the fences good in March, so that after that sheep and cattle shall not stray among the crops. Hence these newly mended fences merit special respect.

There are two sorts of grass fields, hay and pasture. The gates of all fields should be shut carefully in order to prevent cattle wandering into fields other than their own or on to the road. A

safe rule is "Last boy (or girl) shut the gate." The grass is growing in hayfields in May and June, and then every care must be taken that these fields are left untrodden.

During May and June, too, pheasants are sitting on their eggs, and gamekeepers are anxious to keep their plantations quiet. Again, in the first fortnight of August the gamekeepers make every effort to keep the grouse quiet on the moors; but the freedom and safety of the high-road are of greater importance than the shooting.

In England the country is all broken up into fenced fields bounded by hedges and ditches. Wherever you see a farmstead you may be sure that at least a cart-track will lead to it from the nearest main road. The fields round the farm will have gates for routes radiating from the farm, and some of them may be connected by side-ways as well. But except for this, one farmer's land will generally be bounded from the next farm by a stout fence without gates. The representation on an Ordnance map of a road, track, or footpath is no evidence of a right of way. But many roads, for instance those through large parks, though private by right are made public by courtesy. And in many places leave can readily be obtained to visit woods where there is no right of way.

The English law of trespass—under which you have been threatened "that all trespassers will be prosecuted according to the utmost rigour of the law"—refers to damage to property, and not to walking upon the land. To walk in private grounds without permission would give you, among your neighbours, a reputation for rudeness and vulgarity; it is, in fact, a social offence, and would bring your school into disrepute. To break fences or to trample on crops is much more serious, and may bring you within reach of the law, for it is destroying the fruit of other men's work. Courtesy will smooth your path always; and it must never be forgotten that asking leave is better than taking it.

If you are accused—even wrongfully—of having done damage, inquire at once and fully as to the exact nature of the alleged damage, and do your best by apology or by payment to make immediate restitution.

Do not leave any litter behind you. Sandwich papers and other rubbish should be buried. You need not burn the heather. Young trees deserve the greatest respect because, like yourselves, they are the hope of the future.

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